SONY

VIDEO CASSETTE RECORDER

SVO-9500MDP

SERVICE MANUAL

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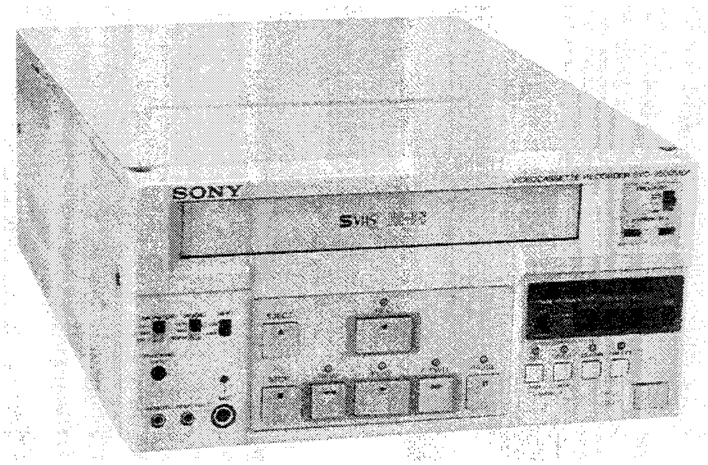

SVHS
625

SPECIFICATIONS

System

Signal system	PAL color, CCIR standards
Recording system	Rotary 2-head azimuth recording, VHS format
Luminance	FM recording
Color	Converted subcarrier phase shift recording

Video

Inputs	VIDEO IN (BNC type) × 2 for a bridging connection 1.0 Vp-p $^{+1}_{-0.5}$ Vp-p, 75 ohms, unbalanced, sync negative S VIDEO IN (4-pin mini DIN) × 2 for a bridging connection Luminance: 1.0 Vp-p, 75 ohms, unbalanced Color: 0.3 Vp-p, 75 ohms, unbalanced
Outputs	VIDEO OUT (BNC type) × 1 1.0 Vp-p ±0.2 Vp-p, 75 ohms, unbalanced, sync negative S VIDEO OUT (4-pin mini DIN) × 1 Luminance: 1.0 Vp-p, 75 ohms, unbalanced Color: 0.3 Vp-p, 75 ohms, unbalanced
Horizontal resolution	More than 240 TV lines (VHS) More than 400 TV lines (S-VHS)
S/N	45 dB (VHS)
Recording level control	Automatic

Audio

Tracks	4 tracks (hi-fi: 2, normal: 2)
Inputs	AUDIO IN CH-1/L, CH-2/R (phono jack) × 1 each −10 dBs (0 dBs = 0.775 V), 47 kilohms, unbalanced MIC (phone jack) × 1 −60 dBs (0 dBs = 0.775 V), 3 kilohms, unbalanced
Outputs	AUDIO OUT CH-1/L, CH-2/R (phono jack) × 1 each −10 dBs (0 dBs = 0.775 V) (47-kilohm load), unbalanced MONITOR OUT (phono jack) × 1 −5 dBs (0 dBs = 0.775 V) (47-kilohm load), unbalanced
S/N	More than 43 dB (with normal audio at 3% distortion)
Frequency response	50 to 12,000 Hz (with normal audio) 20 to 20,000 Hz (with hi-fi audio)
Dynamic range	More than 90 dB (with hi-fi audio)
Recording level control	Limiter system

Other functions

Search	Possible (still, 5 times normal speed in both forward and reverse directions) With SVRM-100: still or picture search with $^1/_{10}$ to 10 times normal speed in both forward and reverse directions

Tape transport

Tape speed	23.39 mm/sec.
Recording and playback time	Approx. 180 minutes (with E-180)
Fast forward and rewind time	Within 2.5 minutes (with E-180)
Usable tape	Standard VHS tapes

General

Power requirements	220/240 V AC ±10%, selectable 50/60 Hz ±10%, 220 V: 0.33 A 240 V: 0.3 A
Power consumption	72 VA
Operating position	Horizontal
Storage temperature	–20°C to +60°C (–4°F to +140°F)
Operating temperature	5°C to 40°C (41°F to 104°F)
Dimensions	270 × 132 × 366 mm (w/h/d) (10$^3/_4$ × 5$^1/_4$ × 14$^1/_2$ inches) not including projecting parts and controls
Weight	Approx. 10 kg (22 lb 1 oz)
Supplied accessory	Operating instructions (1)

Design and specifications are subject to change without notice.

Optional accessories

SVRM-100 Remote control unit (for the front REMOTE connector)
SVAC-100 indicator unit
SVBK-100 33-pin interface board
SVBK-110 34-pin interface board
SVBK-120 RS-232C interface board
RM-81/RM-91 Remote control unit (for the front REMOTE 2 connector)

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SECTION 1
GENERAL DISCRIPTION

1-1. FEATURES

High reliability
Two direct reel motors are employed. A material of high hardness is used for the lower drum to prolong service life. In addition, the beltless mechanism gives high reliability.

Built-in chroma noise reducer
The digital chroma noise reducer yields life-like color reproduction. The recorder also has jitter elimination functions for stable pictures on playback.

Hi-fi audio recording
Frequency-modulated hi-fi audio can be recorded on the video track of a tape while simultaneously recording normal audio on the audio tracks. In playback, either normal audio or hi-fi audio can be selected.

Four-channel audio
Recording and playback of two channels each of normal audio and hi-fi audio, four channels in total, are possible.

Instantaneous recording from long-pause mode
Recording can be instantly resumed even when the recorder is in long-pause mode, so a chance to start recording will not be missed.

Automatic control of video recording level
The automatic gain control (AGC) circuit maintains the proper video level assuring optimum video recording.

Programmed operation
Programmed operation allows you to locate specified points on a tape in search mode and also to automatically repeat a desired portion.

Loop-through output
A video input signal connected to one of the VIDEO IN connectors is directly output from the other VIDEO IN connector. Pictures are displayed on a monitor connected to it, therefore, with good resolution even in modes other than playback, and you can record pictures while viewing them on the monitor.

LED time counter
The time counter reads out the CTL signals recorded on a tape and indicates the tape running time in hours, minutes and seconds. This is useful for checking recording time as well.

Search function
Search in the forward and reverse directions can be performed at 5 times normal speed. When the search dial of an SVRM-100 remote control unit (optional) is used, the picture can be viewed on playback at various speeds from $^1/_{10}$ times to 10 times normal speed as well as in still mode.

Index search
When the SVRM-100 remote control unit (optional) is used, desired points on a tape can be easily located by marking an index signal at these points in advance.

Blank search
The blank search function automatically finds an unrecorded portion on a tape. It may be helpful in locating the starting point of recording.

Frame memory and freeze functions
Pictures can be stored frame by frame in memory, using the frame memory function, and a noiseless still picture can be obtained with the freeze function. For a still picture, either a frame or a field picture can be selected with the touch of a button.

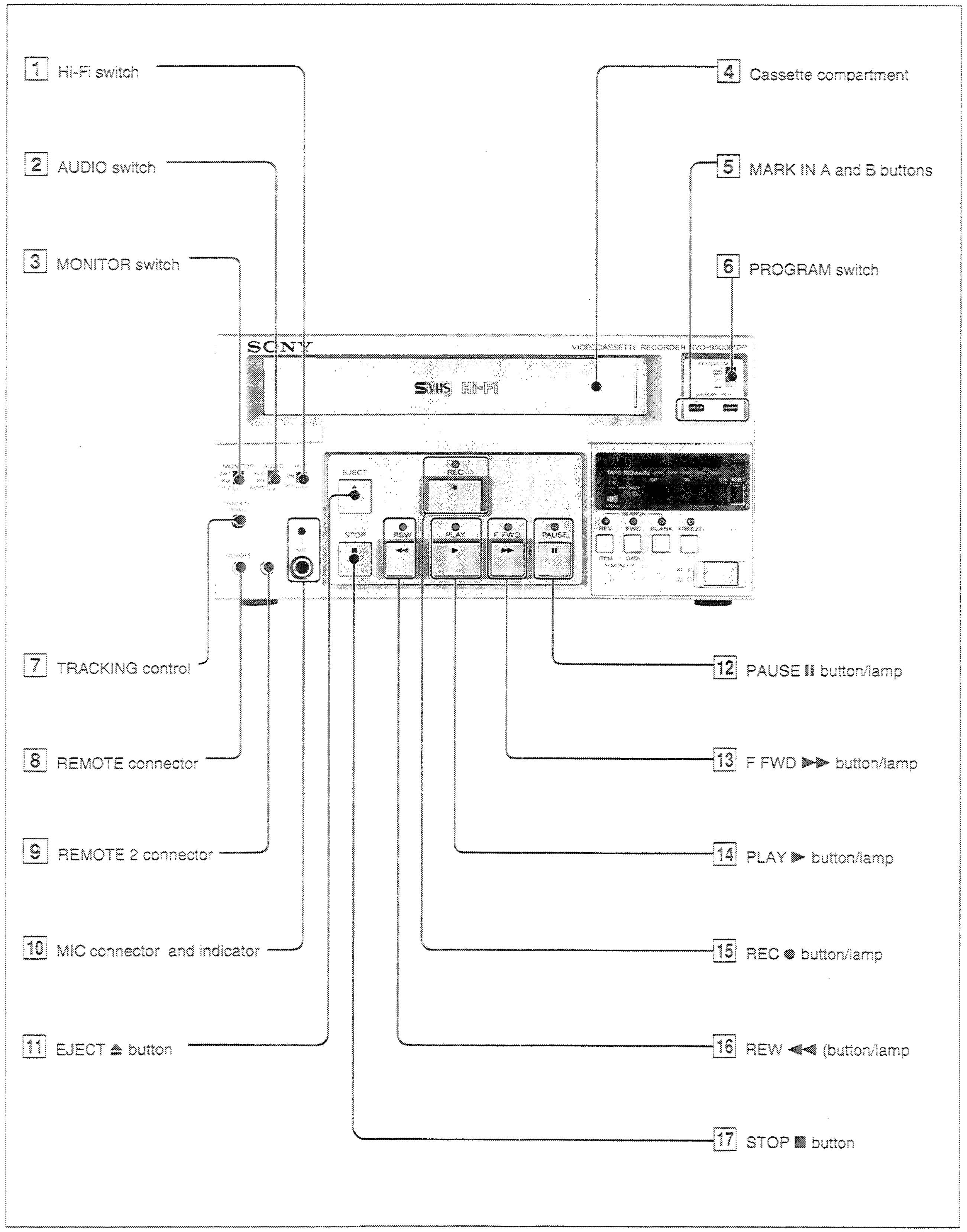
Menu operation function
The menu operation function permits various operational requirements for the recorder to be easily designated, using the buttons on the front panel.

Automatic tape eject at the end
When recording reaches the end of a tape, the recorder automatically ejects the tape. This avoids inadvertent overrecording which erases valuable data. This automatic tape eject can be inhibited through a menu operation.

Tape remaining time indication
A rough estimate of the amount of recording on a tape is displayed.
The remaining time of a tape can also be checked on the SVAC-100 indicator unit (optional).

1-2. PARTS IDENTIFICATION

Front Panel


1 Hi-Fi switch
2 AUDIO switch
3 MONITOR switch
4 Cassette compartment
5 MARK IN A and B buttons
6 PROGRAM switch
7 TRACKING control
8 REMOTE connector
9 REMOTE 2 connector
10 MIC connector and indicator
11 EJECT ⏏ button
12 PAUSE ⏸ button/lamp
13 F FWD ▶▶ button/lamp
14 PLAY ▶ button/lamp
15 REC ● button/lamp
16 REW ◀◀ (button/lamp
17 STOP ■ button
SONY
S-VHS Hi-Fi
EJECT
REC
STOP
REW
PLAY
F FWD
PAUSE

1 Hi-Fi switch

Determines whether to record hi-fi audio.

- Normal audio is constantly recorded regardless of this switch setting.

ON	Record hi-fi audio.
OFF	Do not record hi-fi audio.

2 AUDIO switch

Selects the signal to be output from the AUDIO OUT CH-1/L and CH-2/R connectors on the rear panel.

Connector	AUDIO OUT CH-1/L	AUDIO OUT CH-2/R
Hi-Fi	Hi-fi audio channel 1	Hi-fi audio channel 2
MIX	Both hi-fi audio channels 1and 2	Both normal audio channels 1and 2
NORM	Normal audio channel 1	Normal audio channel 2

3 MONITOR switch

Selects the audio signal to be output from the MONITOR OUT connector on the rear panel. This switch is enabled for the signals selected with the AUDIO switch 2.

CH-1	Channel-1 audio
MIX	Both channel-1 and -2 audio
CH-2	Channel-2 audio

- For details, see "To Monitor the Sound Being Recorded" (page 15).

4 Cassette compartment

5 MARK IN A and B buttons

Press to memorize the time counter value at that time. You can memorize only one point on each button. If the button is pressed several times, only the last point will be memorized.

6 PROGRAM switch

B ⇄ A	For repeatedly playing a particular portion or checking the points memorized on the MARK IN A and B buttons.
OFF	For normal operation without using any programmed operation. (When the unit is to be controlled from a remote control unit connected to the REMOTE connector, be sure to set the switch to OFF.) Or for memorizing points on the MARK IN A and B buttons for programmed operation.
→|← A	For locating a point memorized on the MARK IN A button. Or for memorizing points on the MARK IN A and B buttons for programmed operation. If no point has been memorized, the tape stops at the point indicated by "0:00:00" on the time counter.

7 TRACKING control

Normally set the control at the center FIXED position. Should noise, snow or streaks appear in a playback picture recorded on another machine, turn this control so that the best possible picture is obtained.
When the recorder is in slow mode, slow-tracking control can be performed. If noise, snow or streaks appear in pause mode, or in step-slow playback using an external controller connected via an interface board (optional), or the SVRM-100 remote control unit (optional) turn this control for the optimum picture.
When resuming normal playback, return this control to the original position.

- Do not move the control from the center FIXED position while recording.

8 REMOTE connector (stereo mini jack)

Accepts an optional SVRM-100 remote control unit. Recording, playback, fast forward, rewind, search (with 5-times normal speed) using the search dial and index operations can be remotely controlled.

9 REMOTE 2 connector (stereo mini jack)

Accepts an optional RM-81 or RM-91 remote control unit. Recording start/stop operations can be remotely controlled.

10 MIC (microphone) connector (phone jack) and indicator

Connect a microphone to record an external audio, which will be recorded on normal audio channel 1. During recording from the microphone, the indicator above the MIC connector blinks according to the sound level.

11 EJECT ⏏ button

Press to eject a video cassette.

12 PAUSE ⏸ button/lamp

Press to stop the tape momentarily.

13 F FWD ▶▶ (fast forward) button/lamp

Press to advance the tape rapidly.

14 PLAY ▶ (playback) button/lamp

Press to play the tape back. Pressing this button while pressing the REC ● button 15 sets the unit in record mode.

15 REC ● (recording) button/lamp

For recording, press the PLAY ▶ button 14 while pressing this button.

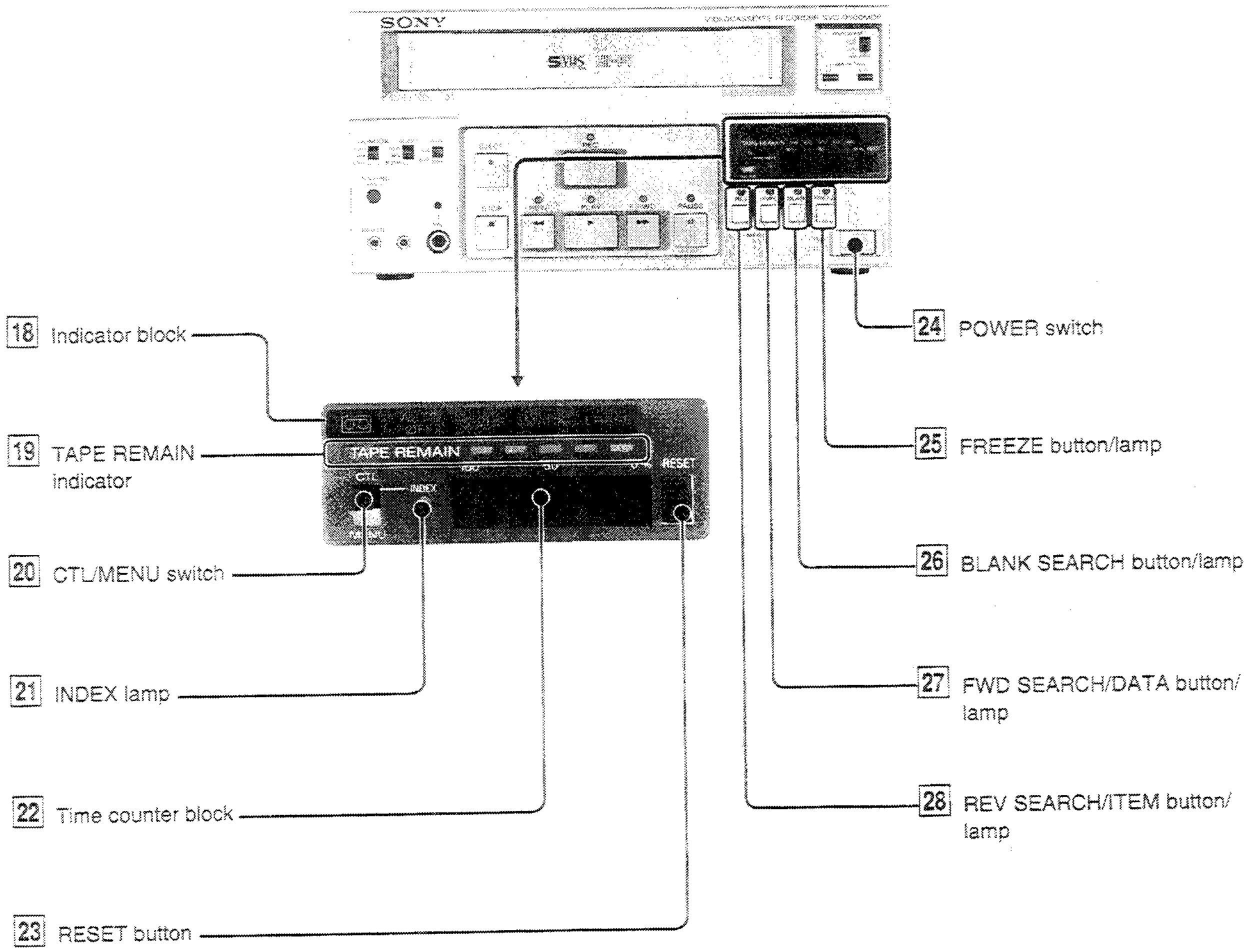
16 REW ◀◀ (rewind) button/lamp

Press to rewind the tape.

17 STOP ■ button

Press to stop the operation of the unit.

Front Panel (continued)



SONY
TAPE REMAIN
CTL
INDEX
MENU
RESET
18 Indicator block
19 TAPE REMAIN indicator
20 CTL/MENU switch
21 INDEX lamp
22 Time counter block
23 RESET button
24 POWER switch
25 FREEZE button/lamp
26 BLANK SEARCH button/lamp
27 FWD SEARCH/DATA button/lamp
28 REV SEARCH/ITEM button/lamp

18 Indicator block

🖭	Lights when a cassette is set in the unit.
AUTO OFF	Lights when the power is applied and there is moisture inside the unit. While this indicator is lit, no cassette can be loaded in the unit.
S-VHS	Lights when recording or playing in S-VHS.
MARK	Blinks when marking an index signal using the SVRM-100 remote control unit.
ERASE	Blinks when erasing an index signal using the SVRM-100 remote control unit.

19 TAPE REMAIN indicator

Shows the amount of recording on a tape in percent.

While measuring the tape remain, the indicator alternately shows the following two indications.

A : TAPE REMAIN ■ □ ■ □ ■
↕
B : TAPE REMAIN □ ■ □ ■ □

Note

The remaining tape cannot be correctly indicated, depending on the length of the tape being used.

20 CTL/MENU switch

Selects data to be displayed on the time counter block 22.

CTL	To count CTL signals on the tape and display the tape transport time in hours, minutes and seconds.
MENU	To go to menu mode and display the items and the respective settings. Other operations cannot be performed in menu mode.

21 INDEX lamp

Lights during index scan and index search operations.

22 Time counter block

Displays data selected with the CTL/MENU switch 20.

23 RESET button

With the CTL/MENU switch 20 set to CTL and the tape transport time of the tape displayed on the time counter block 22, the indication will be set to "0:00:00" when this button is pressed.

24 POWER switch

25 FREEZE button/lamp

Press to display a freeze picture on the monitor screen. Each time the button is pressed, frame-freeze picture, first-field freeze picture and second-field freeze picture are selected in the sequence.

26 BLANK SEARCH button/lamp

Press to search for a unrecorded portion on a tape.

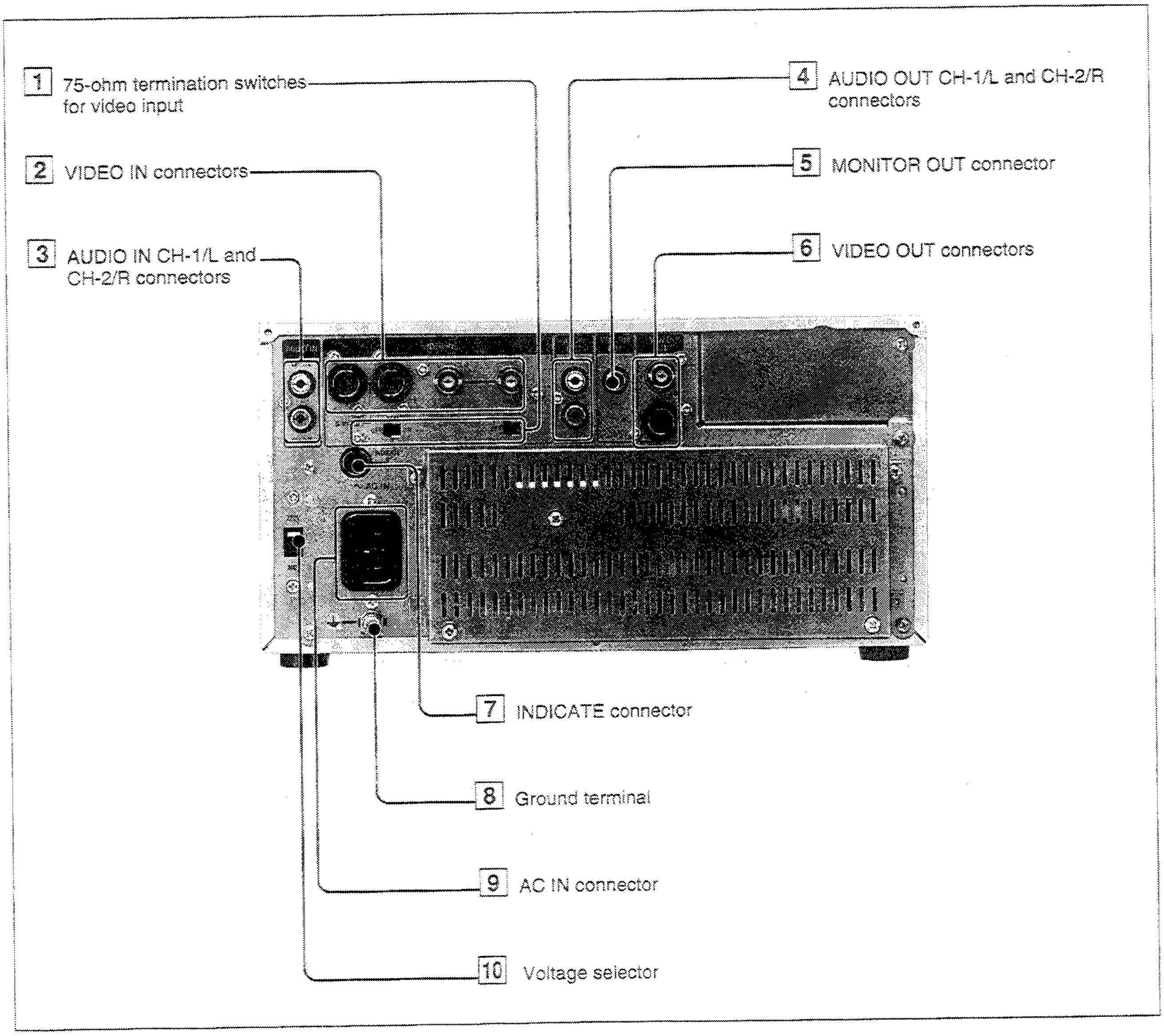
27 FWD (forward) SEARCH/DATA button/lamp

Press for a search operation in the forward direction.
In menu operations (with the CTL/MENU switch 20 set to MENU), press this button to select the datum to be set for the selected item.

28 REV (reverse) SEARCH/ITEM button/lamp

Press for a search operation in the reverse direction.
In menu operations (with the CTL/MENU switch 20 set to MENU), press this button to select the item to be set.

Rear Panel


1 75-ohm termination switches for video input
2 VIDEO IN connectors
3 AUDIO IN CH-1/L and CH-2/R connectors
4 AUDIO OUT CH-1/L and CH-2/R connectors
5 MONITOR OUT connector
6 VIDEO OUT connectors
7 INDICATE connector
8 Ground terminal
9 AC IN connector
10 Voltage selector

$\boxed{1}$ 75-ohm termination switches for video input

Use to terminate the video signal supplied to the VIDEO IN connectors. The left switch is for the S connectors and the right switch is for the BNC-type connectors.

ON	When no bridge connection is required. Or, when the unit is used as the last unit of a bridge connection.
OFF	For a bridge connection (using one of the VIDEO IN connectors for loop-through output).

$\boxed{2}$ VIDEO IN (input) connectors (S type/BNC type)

The left two connectors are S connectors and the right two connectors are BNC connectors for composite signals.
Bridge connection is also allowed. **For the bridge connection, set the respective 75-ohm termination switches $\boxed{1}$ for the video input of the units other than the last unit of the connection to OFF.**

3 AUDIO IN (input) CH-1/L (channel 1/left) and CH-2/R (channel 2/right) connectors (phono jacks)

4 AUDIO OUT (output) CH-1/L (channel 1/left) and CH-2/R (channel 2/right) connectors (phono jacks)

The audio signal selected at the AUDIO switch on the front panel is supplied here.

5 MONITOR OUT (audio monitor output) connector (phono jack)

The audio signal selected at the MONITOR switch on the front panel is supplied here.

6 VIDEO OUT (output) connectors (BNC type/S type)

The upper connector is a BNC-type connector for normal composite signals and the lower connector is an S connector.

7 INDICATE connector (8-pin)

Accepts the SVAC-100 indicator unit (optional).

8 Ground terminal

When the recorder cabinet is to be grounded, connect a ground wire here.

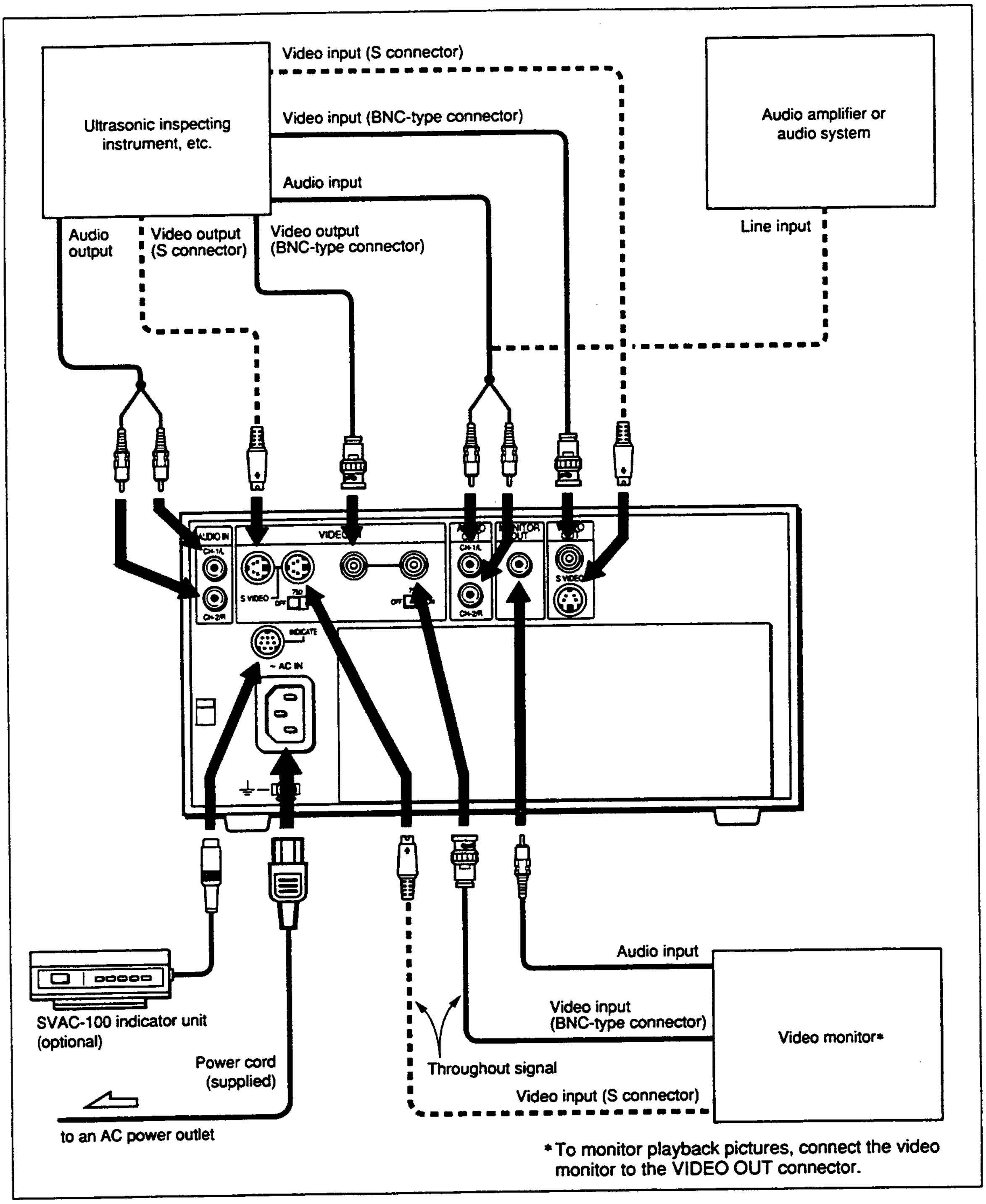
9 AC IN (input) connector

Connect to an AC power outlet using the supplied power cord.

10 Voltage selector

Use to select the operating voltage of the SVO-9500MDP, 220 V or 240 V, according to your local power supply.

1-3. CONNECTIONS


Ultrasonic inspecting instrument, etc.
Video input (S connector)
Video input (BNC-type connector)
Audio input
Audio output
Video output (S connector)
Video output (BNC-type connector)
Audio amplifier or audio system
Line input
SVAC-100 indicator unit (optional)
Power cord (supplied)
to an AC power outlet
Throughout signal
Audio input
Video input (BNC-type connector)
Video input (S connector)
Video monitor*

*To monitor playback pictures, connect the video monitor to the VIDEO OUT connector.

Notes

- When a microphone is connected in normal recording, the signal connected to the AUDIO IN CH-1/L connector on the rear is automatically switched to the signal from the microphone. In hi-fi recording, the signal from the AUDIO IN CH-1/L connector is recorded.
- Set the 75-ohm termination switches according to the description on the previous page 6.

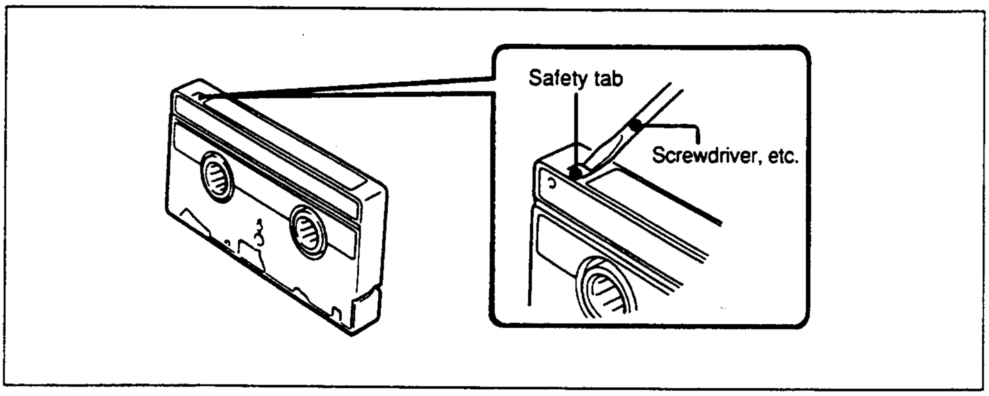
Notes on Cassettes

Notes on cassette insertion

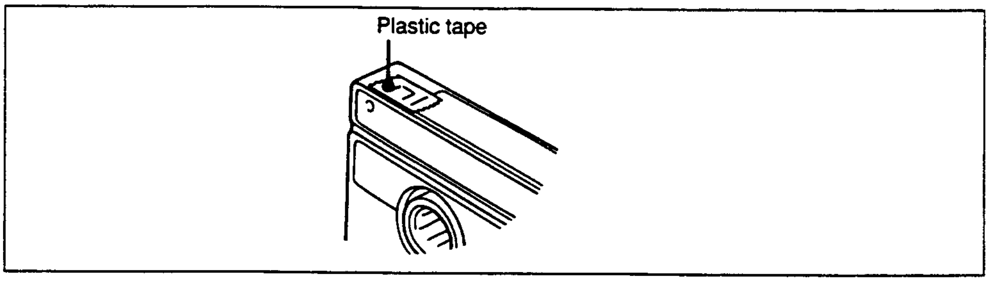
- Be sure to insert the cassette straight into the entrance of the compartment.
- Check the cassette sides and be sure to insert the cassette correctly **with the label side up**.
- The labels on the cassette should be firmly attached. If they peel off an inserted cassette, you might not be able to remove the cassette.

About the safety tab

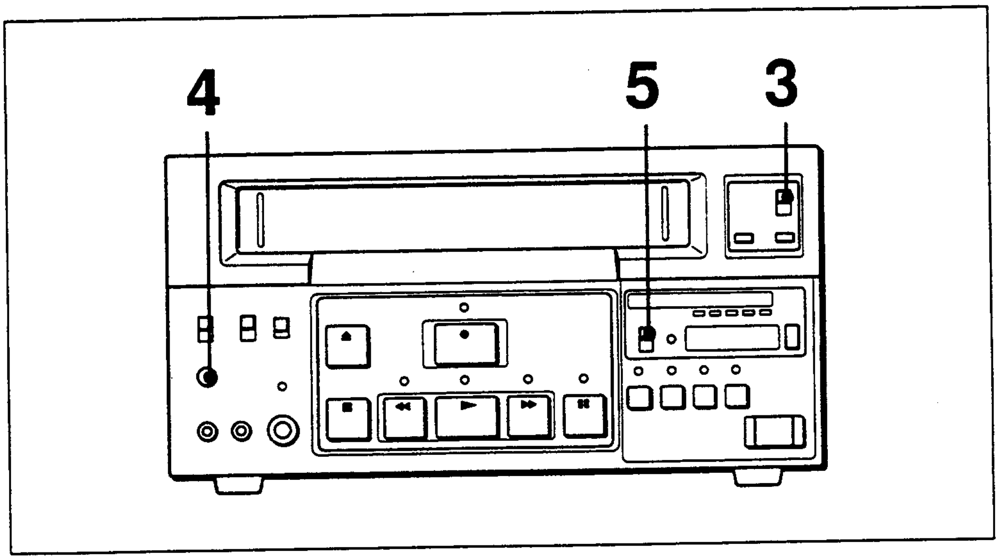
When re-recording on a recorded tape, the pre-recorded material will be automatically erased. To avoid unintentional erasure of previously recorded video sources, break off the safety tab on the cassette. With the tab removed, recording mode cannot be activated.



To re-record on the cassette
Cover the slot where the safety tab used to be located with plastic tape.



Preparations



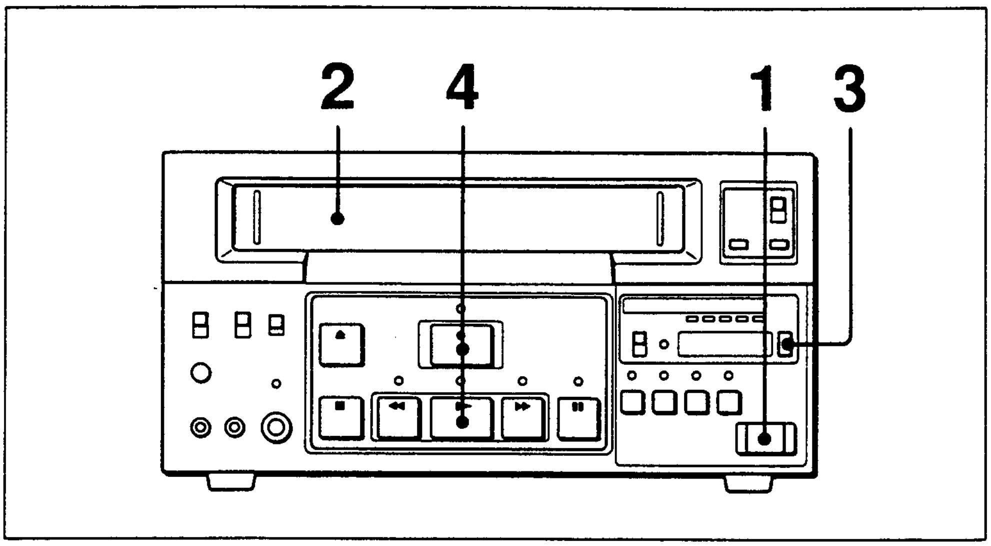
1 Perform the necessary connections.

2 Turn on the power of the video monitor.

3 Set the PROGRAM switch on the recorder to OFF.

4 Set the TRACKING control to FIXED.

5 Set the CTL/MENU switch to CTL.



1 Press the POWER switch to turn on the power of the recorder.

2 Insert a cassette.

3 Press the RESET button.
The time counter shows "0:00:00."

4 Press the PLAY ▶ button while pressing the REC ● button.
Recording begins.

Regarding a cassette
Be sure to check the tab on the bottom of the cassette is in place before inserting it in the recorder. **Recording mode cannot be activated with a cassette without the tab.**

Audio recording

When an audio signal is connected to the AUDIO IN CH-1/L and CH-2/R connectors on the rear panel, it is recorded along with video. Set the Hi-Fi switch on the front panel to determine whether to record normal audio only or to record hi-fi audio as well.

Audio to be recorded	Hi-Fi switch setting
To record normal audio only	OFF
To record both normal audio and hi-fi audio	ON

Recording with a microphone
By connecting a microphone to the MIC connector on the front panel, necessary information can be recorded as voice memos. The voice is recorded on the track of normal audio channel 1. The recording level is automatically adjusted to the optimum value. During recording with a microphone, the indicator above the MIC connector lights in response to voice input.

To stop the tape momentarily

Press the PAUSE ⏸ button. To resume recording, press the PAUSE ⏸ button again. (This operation can be controlled from a distance when a remote control unit or a foot switch has been connected.)

Long pause mode

If the pause mode continues for more than about 5 minutes, the tape around the head drum automatically slackens to protect the video head and the tape. This is called "long pause mode." To release the long pause mode, press the PAUSE ⏸ button. Recording is immediately resumed.

When recording is finished

Press the STOP ■ button.

If the recording is done to the end of the tape

Recording stops and the cassette is automatically ejected.
This automatic eject can be inhibited through a menu operation. For details, see "Menu Operations" (page 30).

If the tape does not run by pressing any of the operation buttons

1. Press the EJECT ⏏ button to take out the cassette.
2. Turn the reel in the direction of the arrow on the bottom of the cassette until the leader tape is completely taken up.
3. Insert the cassette again.
   If the cassette cannot be ejected, or if the tape transport buttons are not effective after above operation, consult your nearest Sony service facility.

To Find the Starting Point of Recording—Blank Search

The beginning of the unrecorded portion on a tape on which several images have been already recorded can be easily located, so that you may continue recording from that point. Insert the cassette in the compartment and press the BLANK button. The recorder operates as follows.

1. Search mode in the forward direction is activated and the BLANK lamp lights.
2. When a blank portion cannot be located within about 10 seconds, fast forward mode is activated to continue searching for the blank portion.
3. When a blank portion is detected, search mode in the reverse direction is activated to locate the beginning of the blank portion.
4. When the beginning of the blank portion is located, slow search mode in the forward direction is activated and then the tape stops at the beginning of the blank portion in pause mode. The BLANK lamp lights.
   If the beginning of the blank portion cannot be located, the tape rewinds to the beginning and blank search mode is automatically released.

To cancel blank search mode
Blank search mode is automatically canceled when the search reaches the end of tape. To cancel the mode on the middle of a tape, press any of the tape transport buttons.

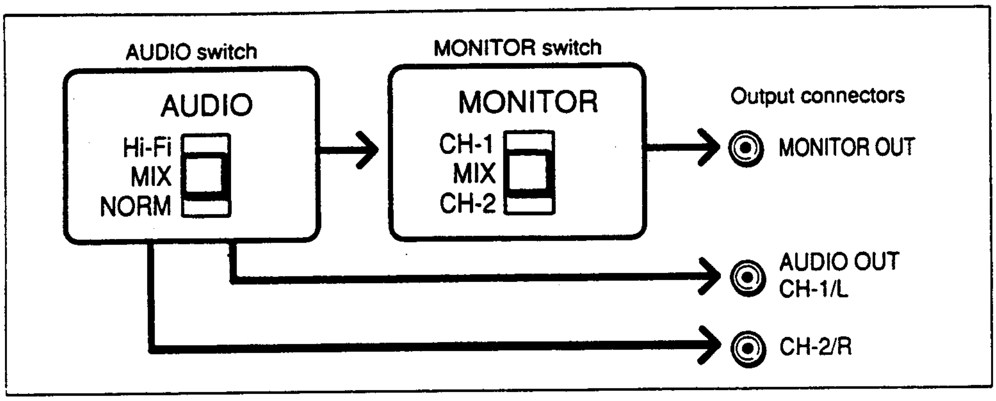
To View the Picture Being Recorded

While recording, the picture being recorded can be seen on a monitor screen. Connect a video monitor to one of the VIDEO IN connectors on the rear panel. The loop-through output function provides high-resolution pictures.

Automatic recording level adjustment
The built-in AGC circuit automatically adjusts the video recording level to the optimum value.

To Monitor the Sound Being Recorded

Select the sound to be monitored with the AUDIO switch and the MONITOR switch.


AUDIO switch
MONITOR switch
AUDIO
Hi-Fi
MIX
NORM
MONITOR
CH-1
MIX
CH-2
Output connectors
MONITOR OUT
AUDIO OUT
CH-1/L
CH-2/R

AUDIO switch settings

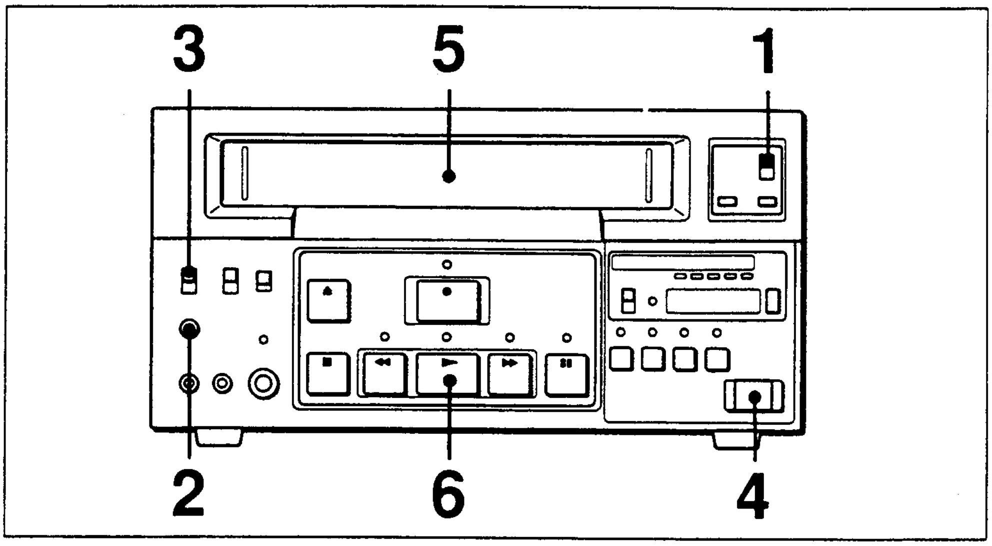
Sound to be monitored	Switch settings
To monitor hi-fi audio channel 1 and channel 2 individually	Hi-Fi
To monitor normal channel 1 and channel 2 individually	NORM
To monitor channels 1 and 2 simultaneously. (Hi-fi channels 1 and 2 are provided from the CH-1/L connector and normal audio channels 1 and 2 are provided from the CH-2/R connector.)	MIX

MONITOR switch settings

Channel to be monitored	Switch setting
Channel 1 only	CH-1
Both channels 1 and 2	MIX
Channel 2 only	CH-2

- The MONITOR switch has no effect on the audio output from the AUDIO OUT CH-1/L and CH-2/R connectors.

Operation



1 Set the PROGRAM switch of the recorder to OFF.

2 Set the TRACKING control to FIXED.

3 Set the MONITOR switch to:

MIX	for normal monitoring
CH-1	when monitoring only the sound of channel 1.
CH-2	when monitoring only the sound of channel 2.

- This switch has no effect on outputs to the AUDIO OUT CH-1/L and CH-2/R connectors.

4 Turn on the power.

5 Insert the cassette to be played back.

6 Press the PLAY ▶ button.
Playback begins.

To stop playback
Press the STOP ■ button.

To stop the tape momentarily
Press the PAUSE ⏸ button. The tape stops and a still picture appears on the monitor screen.
To resume playback, press the PAUSE ⏸ button again or the PLAY ▶ button.

- **If pause mode continues for about 5 minutes,** the recorder automatically enters long pause mode. The still freeze function permits a stable still picture to be seen even in long pause mode.
  Press the PAUSE ⏸ button to release long pause mode.

When the tape is played back to the end
It automatically rewinds to the beginning and then stops.

If snow or streaks may appears on the picture
Slowly turn the TRACKING control clockwise or counterclockwise until the best possible picture is obtained.

- When the playback of this particular tape is finished, be sure to return the TRACKING control to the FIXED position.

To obtain a noiseless still picture

Press the FREEZE button during playback. You will get a clear still picture without noise on the screen.
One push of the FREEZE button shows a frame-freeze picture, the second push of the button shows a first-field picture and the next push shows a third-field picture. Thus, each time the button is pressed, these three freeze pictures are cyclically displayed.
The picture to be displayed at the first push of the FREEZE button can be selected from frame freeze picture and field-freeze picture, as desired. For details, see "Menu Operations" (page 30).

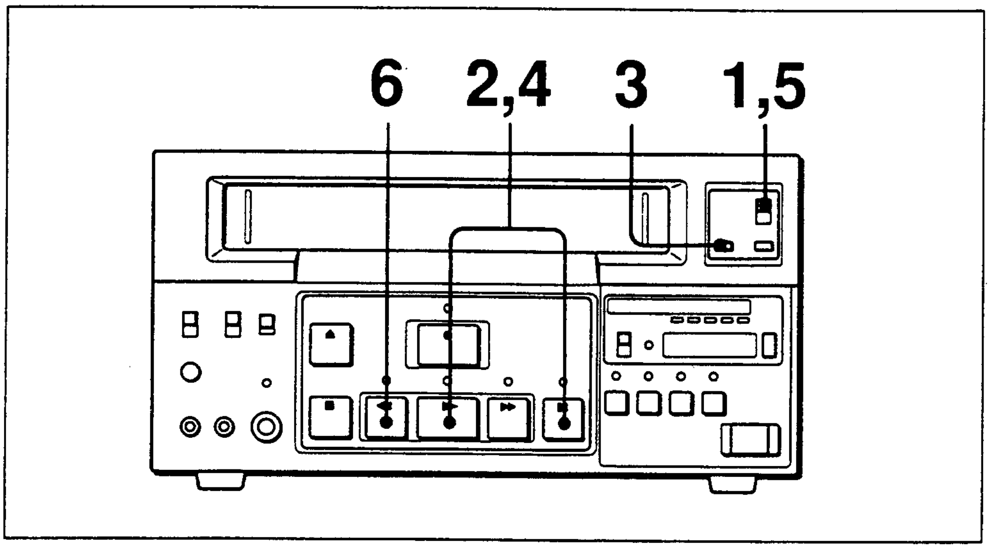
To cancel freeze mode
Hit any of the tape transport buttons other than the FREEZE button.

Freeze picture during search or pause
When the FREEZE button is pressed during search or pause, the tape runs in the reverse direction from that point for about 2 seconds and playback mode is activated. Playback continues to the point where the button was pressed and then the freeze picture for that point is displayed. In both cases, the tape stops at the point immediately after the freeze picture.

Programmed Operation

Using the MARK IN A and B buttons and the PROGRAM switch, you can quickly locate a desired point or repeatedly play a particular portion.

To quickly return to a desired point



1 Set the PROGRAM switch to OFF.

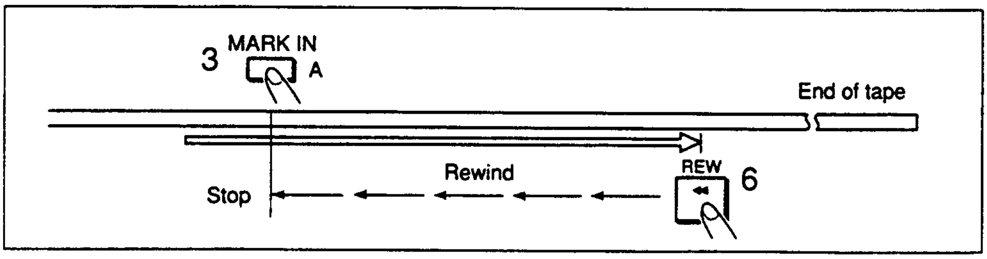
2 Play the tape and stop it at the desired point momentarily.

3 Press the MARK IN A button.
The desired point will be memorized.

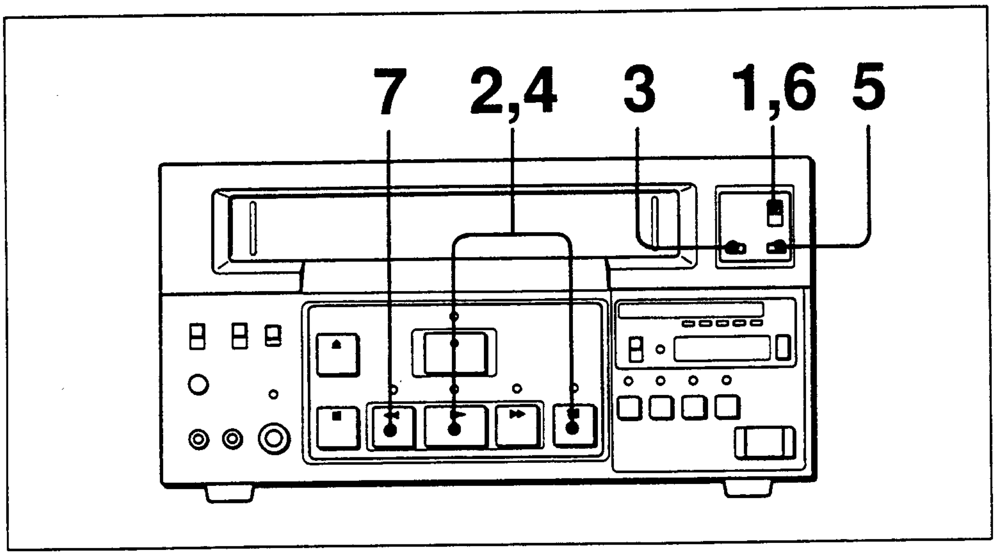
4 Press the PLAY ▶ button or the PAUSE ❚❚ button to resume the playback.

5 Set the PROGRAM button to $\overset{A}{\rightarrow\mid\leftarrow}$.

6 Press the REW ◀◀ button.
The tape will stop at the point memorized on the MARK IN A button.



To repeat a desired portion



1 Set the PROGRAM switch to OFF.

2 Play the tape and stop it momentarily at the point from which the playback is to be started.

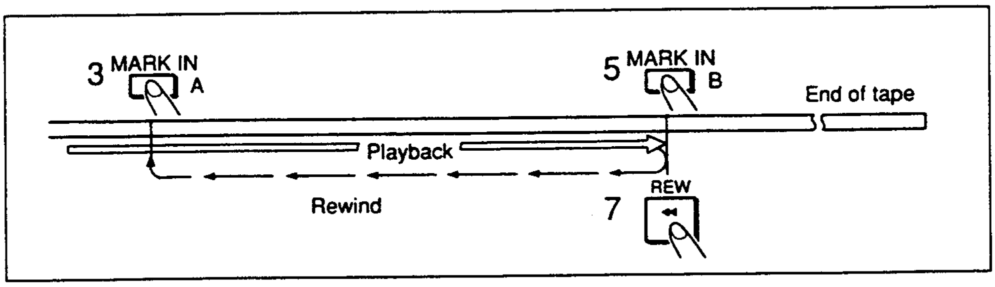
3 Press the MARK IN A button.

4 Search for a point where the playback is to be stopped and stop the tape momentarily at that point.

5 Press the MARK IN B button.

6 Set the PROGRAM switch to $_{B}\circlearrowleft^{A}$.

7 Press the REW ◀◀ button.
The portion between the points memorized on the MARK IN A and B buttons is repeatedly played back.


3 MARK IN A
5 MARK IN B
End of tape
Playback
Rewind
REW
7

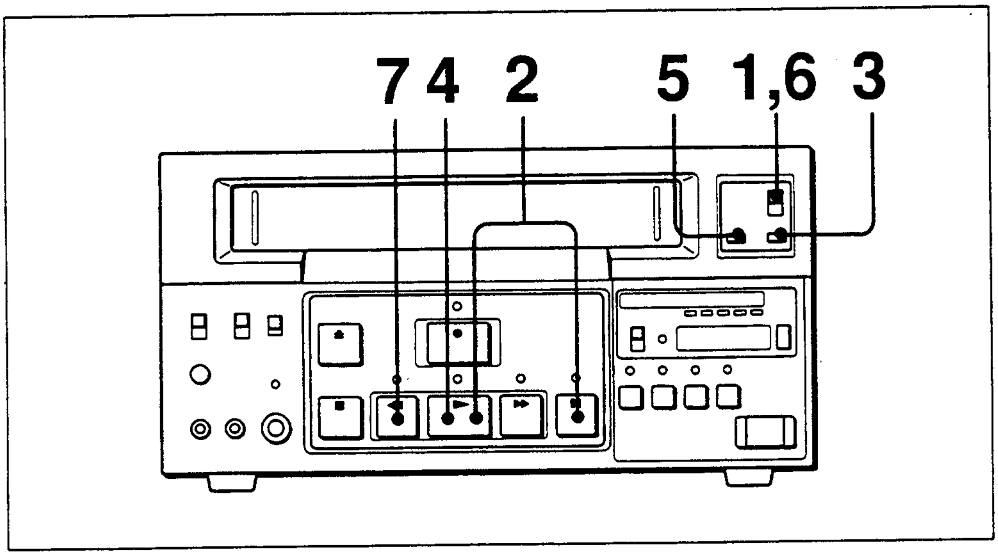
To check the memorized points

1. Press the STOP ■ button to stop the tape.
2. Set the PROGRAM switch to B⟲A .
3. Press the MARK IN A or B button.
   The memory on that button will be displayed on the time counter while pressing the button.

To display the time between two particular points designated for a repeat playback

1. Stop the tape with the STOP ■ button.
2. Set the PROGRAM switch to B⟲A .
3. Press the MARK IN A and B buttons simultaneously.
   While the buttons are pressed, the time between the designated points will be displayed on the time counter.

To repeat between the beginning of a tape and a particular point



1 Set the PROGRAM switch to OFF.

2 Search for a point where the playback is to be stopped and stop the tape momentarily at that point.

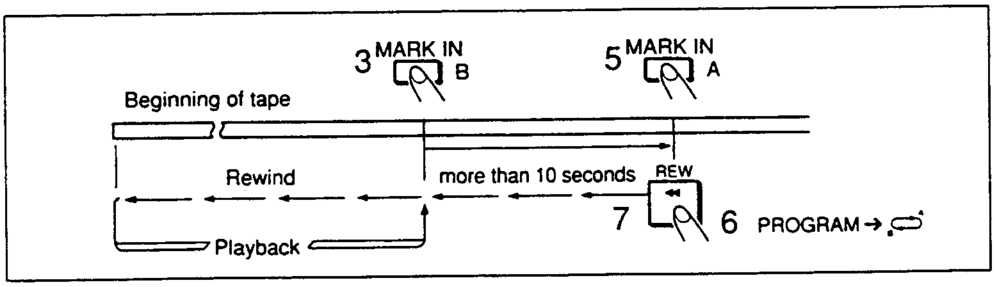
3 Press the MARK IN B button.

4 Press the PLAY ▶ button. After playing the tape for more than 10 seconds, stop the tape momentarily.

5 Press the MARK IN A button.*

6 Set the PROGRAM switch to B↺A

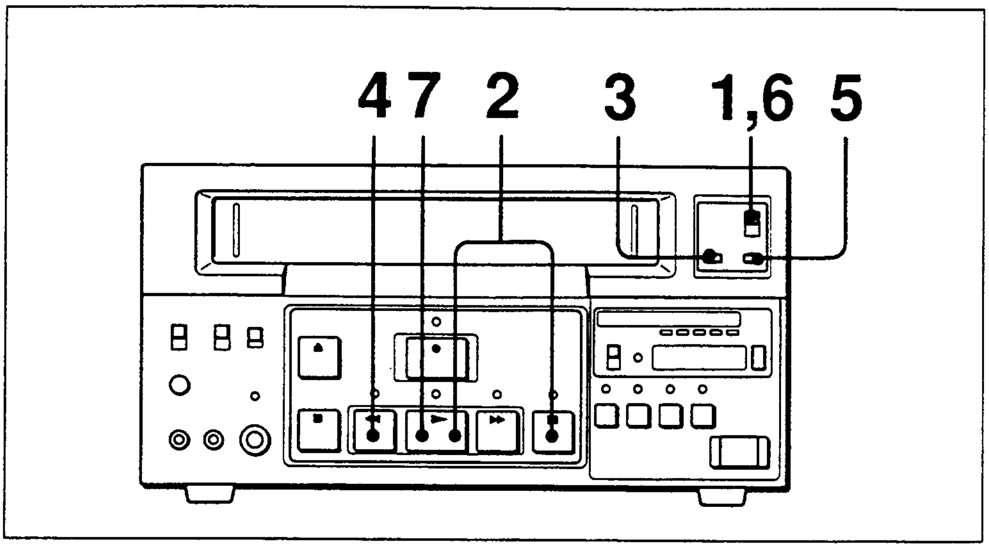
7 Press the REW ◀◀ button.
The tape rewinds to the beginning and the unit enters the playback mode. Then, the designated portion to the point memorized on the MARK IN B button is repeatedly played back.


3 MARK IN B
5 MARK IN A
Beginning of tape
Rewind
more than 10 seconds
REW
7
6 PROGRAM →
Playback

***Why must the MARK IN A button be pressed?**

If a point before the one memorized on the MARK IN B button has been memorized on the MARK IN A button, the desired portion cannot be repeatedly played back. To avoid this, a point after the desired end point must be memorized on The MARK IN A button.

To repeat between a particular point and the end of the tape



1 Set the PROGRAM switch to OFF.

2 Search for a point where the playback is to begin and stop the tape momentarily at that point.

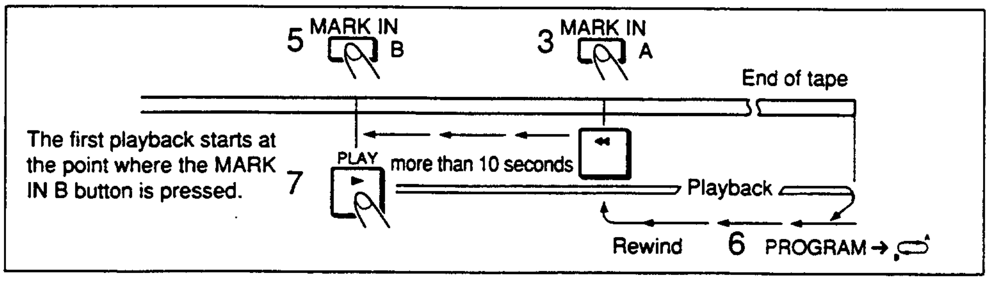
3 Press the MARK IN A button.

4 Press the REW ◀◀ button to rewind the tape for more than 10 seconds, then stop the tape momentarily.

5 Press the MARK IN B button.*

6 Set the PROGRAM switch to $_{B}\circlearrowleft^{A}$

7 Press the PLAY ▶ button.
The tape is played back to the end and rewinds to the point memorized on the MARK IN A button, and the playback of the portion from that point to the end of the tape is repeated.


5 MARK IN B
3 MARK IN A
End of tape
The first playback starts at the point where the MARK IN B button is pressed.
7
PLAY
more than 10 seconds
Playback
Rewind
6 PROGRAM →

***Why must the MARK IN B button be pressed?**
If a point after the one memorized on the MARK IN A button has been memorized on the MARK IN B button, the desired portion cannot be repeatedly played back. To avoid this, a point before the desired point must be memorized on the MARK IN B button.

To stop the repeat playback
Press the STOP ■ button.

When the programmed operation is finished
Be sure to return the PROGRAM switch to OFF.

MARK IN A and B buttons
The MARK IN A and B buttons can also be used during playback.

Memory backup function
The last memories on the MARK IN and B buttons and the last time counter display will be maintained even if the power is turned off. If you perform a memorizing operation and turn off the power within 15 seconds after the power was turned on, the data in memory will not be retained.

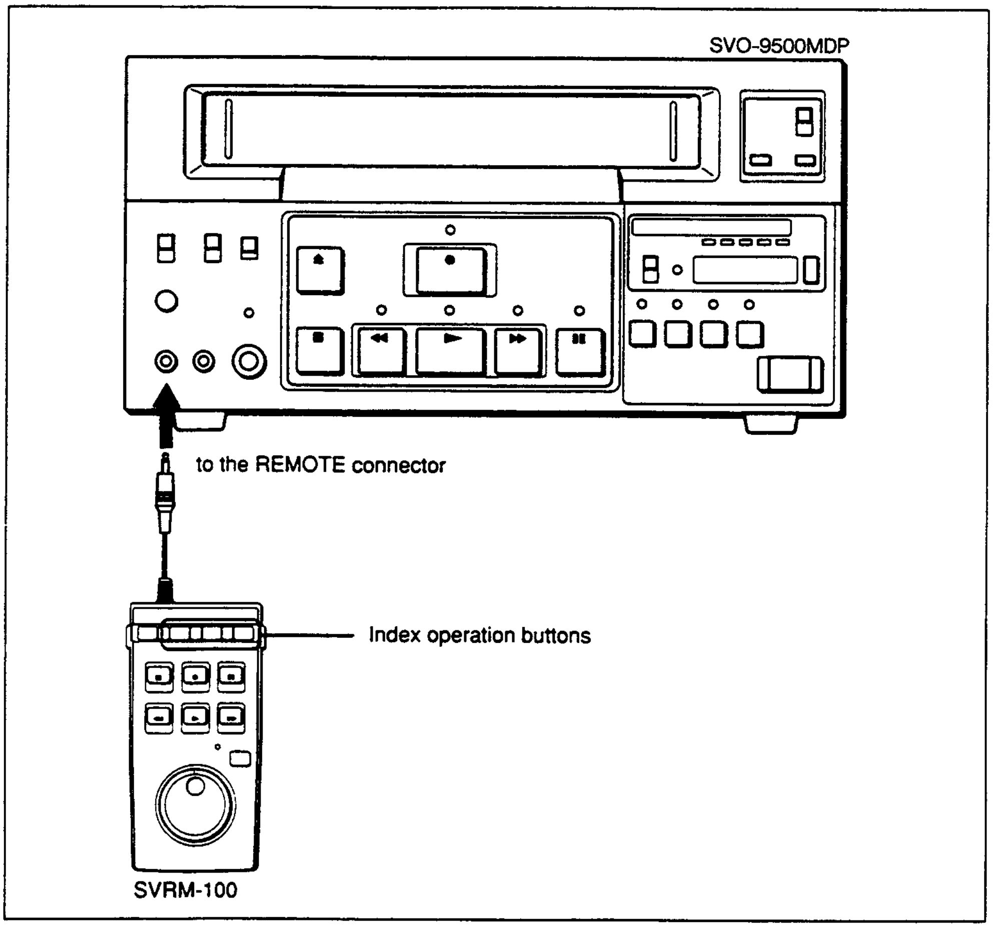
To erase the memory
You can memorize only one point for each MARK IN A or B button.
If the button is pressed several times, only the last point will be memorized.
When the RESET button is pressed with the PROGRAM switch set at OFF or $\rightarrow\overset{A}{|}\leftarrow$, the data are erased from memory and the "0:00:00" point will be memorized on both buttons.

Index Operation (VISS) VISS: VHS Index Search System

By detecting an index signal recorded on a tape, a specific program can easily be located. The index operation is performed on the SVRM-100 remote control unit (optional) connected to the recorder. **Note that the index operation is not possible only with the recorder.**

To mark index signals

The index signals can be either automatically or manually marked. Automatic marking mode is selected at the factory. To change the mode, see "Menu Operations" (page 30).



Automatic marking

Press the STOP ■ button to set the recorder to stop mode. When recording is started by simultaneously pressing the REC ● button and PLAY ▶ button in this status, an index signal for 2.1 seconds is automatically marked at the starting point of recording.
No index signal is marked when recording is started from pause mode.

Manual marking
When manual marking mode is selected through a menu operation, mark index signals as follows.

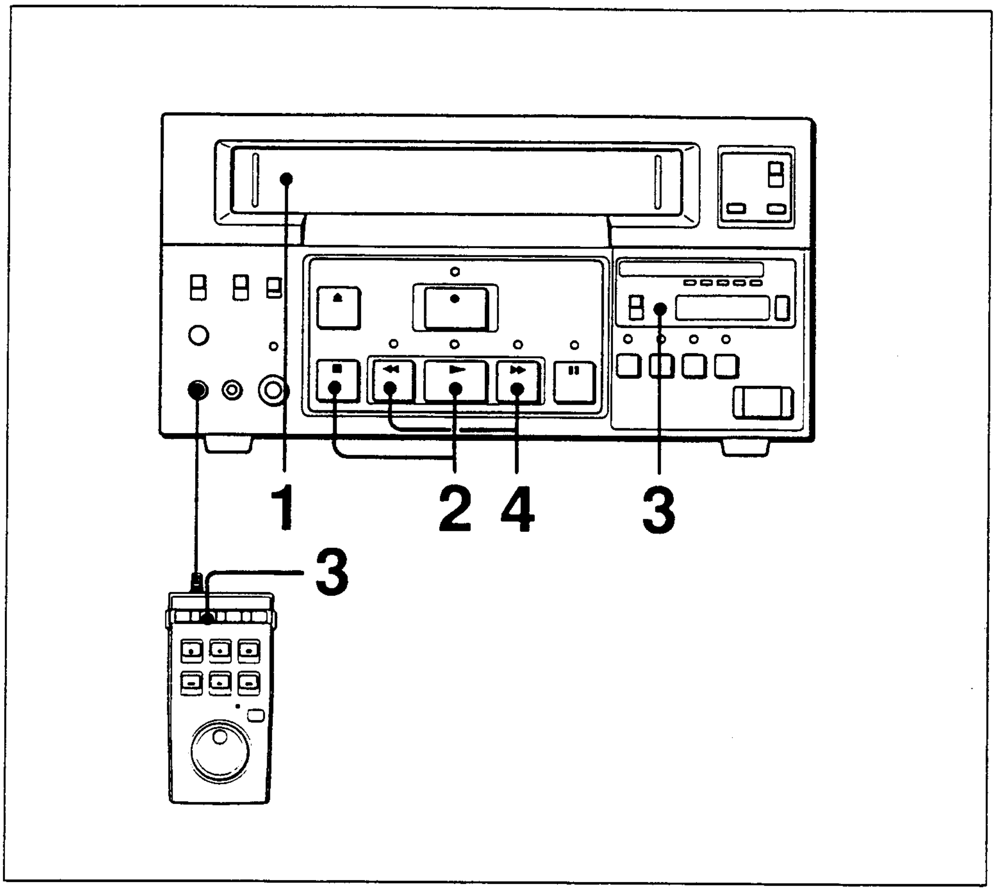
When the recorder is in recording or playback mode, press the MARK button on the remote control unit. The MARK indicator on the recorder blinks and an index signal is marked for about 2.1 seconds. When marking is completed, the MARK indicator goes off.

When the recorder is in stop or pause mode, the MARK indicator lights up when the MARK button is pressed to show that the recorder is in marking standby mode. When the recorder is set to recording or playback mode, the MARK indicator starts blinking and an index signal are marked for about 2.1 seconds. When marking is completed, the MARK indicator goes off.
If the recorder is set to modes other than recording or playback, marking standby mode is cancelled.

You cannot mark any index signal:
- when using a cassette without its safety tab. (Nor can you erase the recorded index signals on the tape.)
- on an unrecorded portion of a tape

Notes on marking index signals
- Mark an index signal more than 2 or 3 minutes before or after the previous index signal so than the recorder can detect it correctly.
- While an index signal is being marked during playback, the sound is not heard, but it will not be erased.

To find the desired picture – Index scan



1 Insert a cassette with index signals marked.

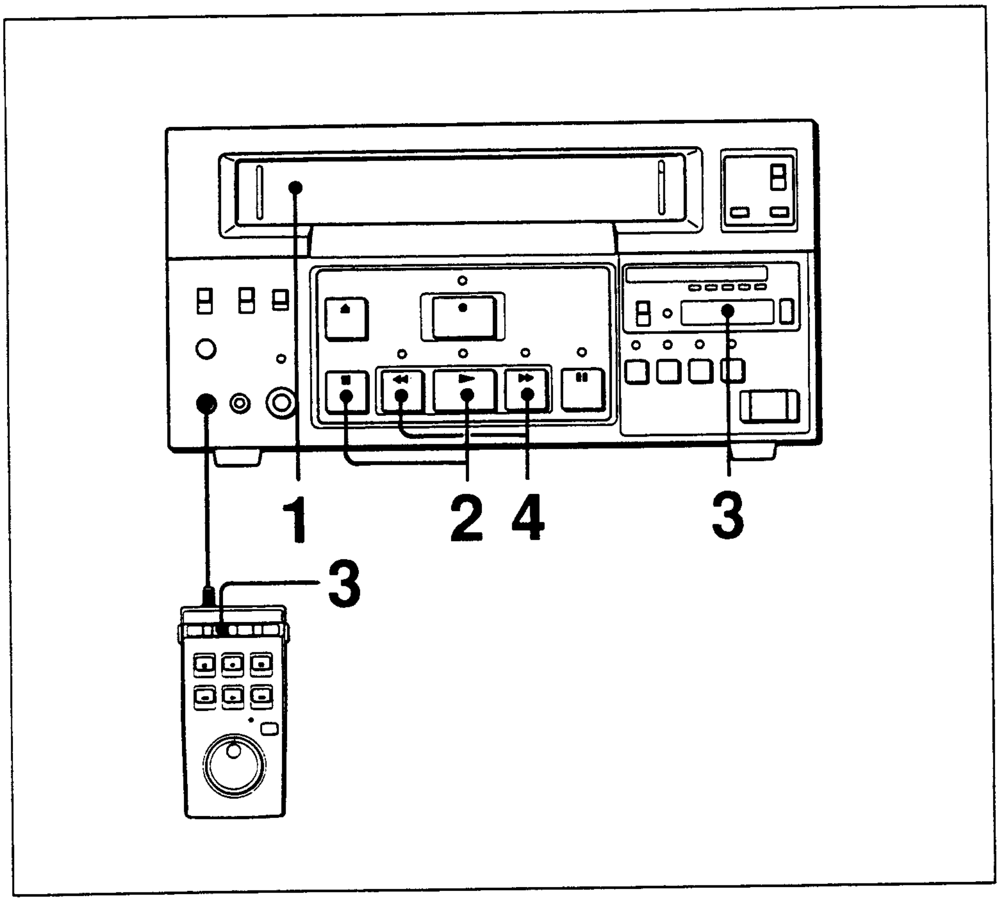
2 Set the recorder to stop or pause mode.

3 Press the INDEX button on the remote control unit.
This activates index scan mode, and the INDEX indicator on the recorder lights up.

4 To scan previous programs, press REW ◀◀ button.
To scan programs ahead, press F FWD ▶▶ button.
Upon finding an index signal, the recorder plays back the tape for approximately 10 seconds and then starts to search for the next index signal.
Repeat the above procedure up to the beginning or the end of the tape.

To release index scan mode
When the tape is scanned up to the beginning or the end, index scan mode is automatically released and the INDEX indicator goes off.
To release the mode in the middle of a tape, press a tape transport button other than the F FWD ▶▶ or REW ◀◀ button.

To find the desired picture by specifying with a number – Index search



1 Insert a cassette with index signals marked.

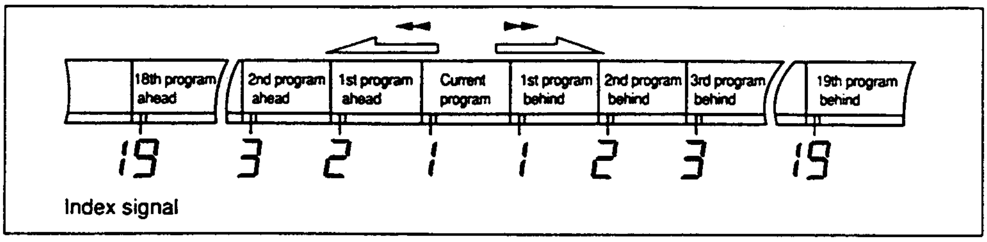
2 Set the recorder to stop or playback mode.

3 Press the INDEX button the number of times there are index signals between the desired point and the current point on the tape (backward or forward).
Up to 39 numbers can be designated. The designated number is displayed on the time counter.

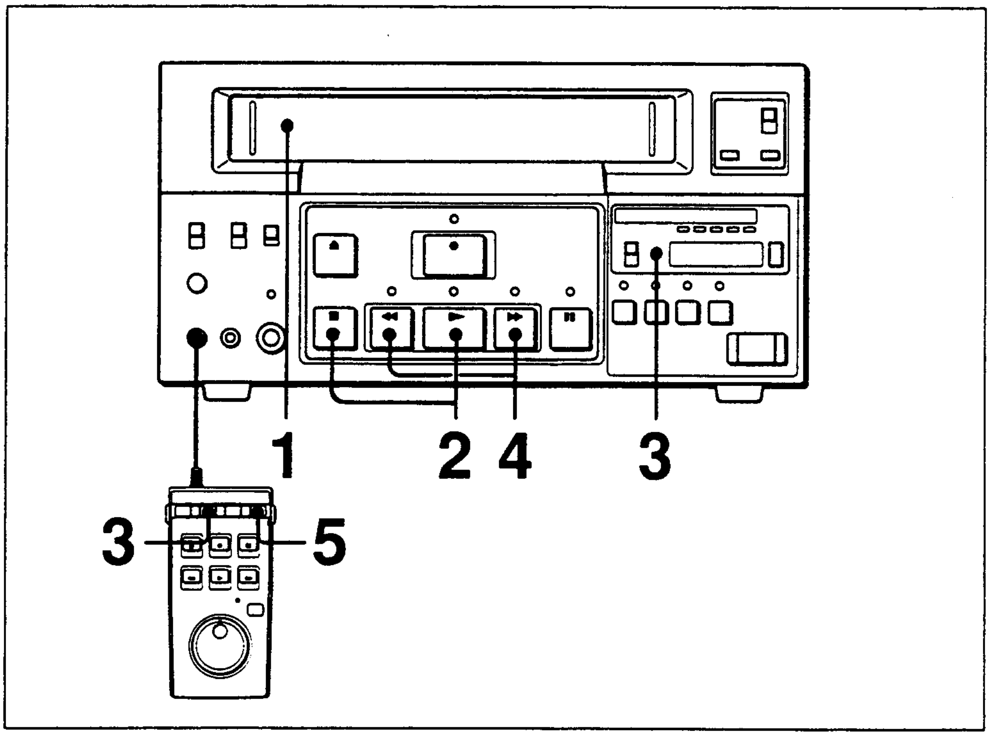
4 To locate a picture before the current point on the tape, press the REW ◀◀ button.
To locate a picture after the current point, press the F FWD ▶▶ button.
Every time an index signal is detected, the number on the time counter decreases by one.
When the number reaches 0, playback begins.

To release index search mode
When the tape is searched up to the beginning or the end, index search mode is automatically released and the INDEX indicator goes off.
To release the mode in the middle of a tape, press a tape transport button other than the F FWD ▶▶ or REW ◀◀ button.

How to designate the index number in index search operation
To search for a picture before the current point on the tape, the current current point is counted as 1.


◀◀
▶▶
18th program ahead
2nd program ahead
1st program ahead
Current program
1st program behind
2nd program behind
3rd program behind
19th program behind
19
3
2
1
1
2
3
19
Index signal

To erase undesired index signals



1 Insert a cassette with index signals marked.

2 Set the recorder to stop or playback mode.

3 Press the INDEX button on the remote control unit.
The INDEX indicator on the recorder lights.

4 To erase the index signal before the current point, press REW ◀◀ button.
To erase the index signal after the current point, press F FWD ▶▶ button.
When an index signal is detected, the recorder enters in playback mode.

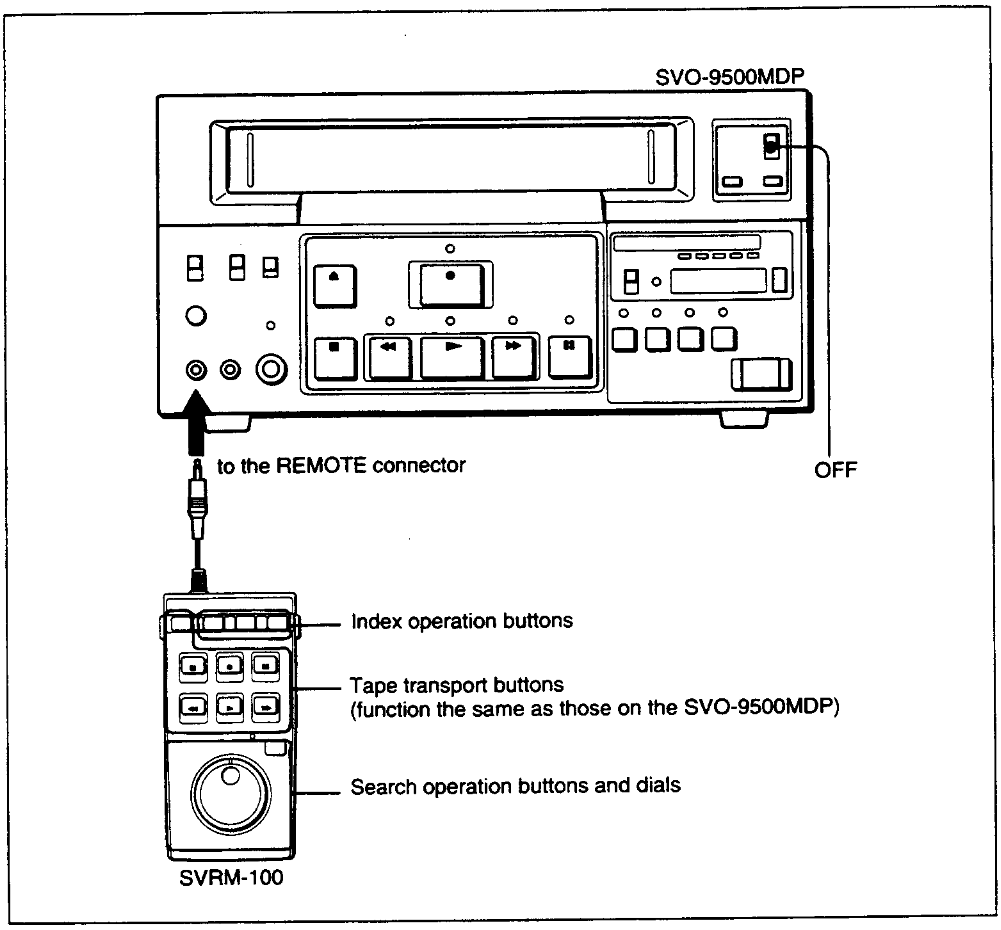
5 Check the picture while it is being played back and when you want to erase the index signal, press the ERASE button on the remote control unit.
The index signal is erased and the recorder searches for the next index signal.

While the index signal is being erased, the sound is not heard but will not be erased.

Using a Remote Control Unit SVRM-100

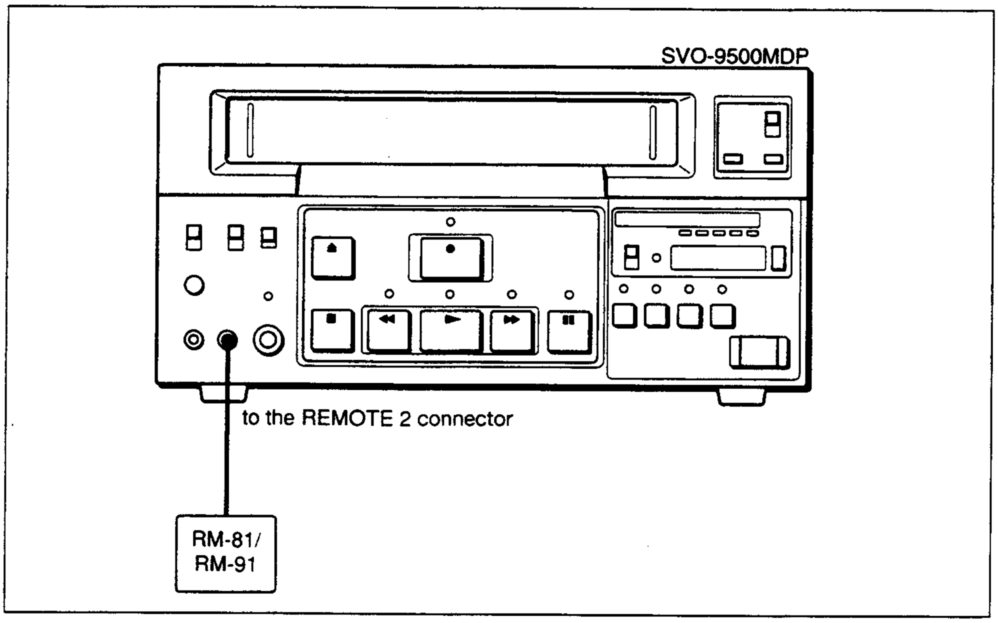
The SVO-9500MDP can be remotely controlled from the SVRM-100 remote control unit (optional). With the SVRM-100, index operation and search operation and jog/shuttle search operations using search dials are possible. The buttons on the SVRM-100 which correspond to those on the recorder function the same.

- To use the SVRM-100, be sure to set the PROGRAM switch of the recorder to OFF.


SVO-9500MDP
to the REMOTE connector
OFF
Index operation buttons
Tape transport buttons
(function the same as those on the SVO-9500MDP)
Search operation buttons and dials
SVRM-100

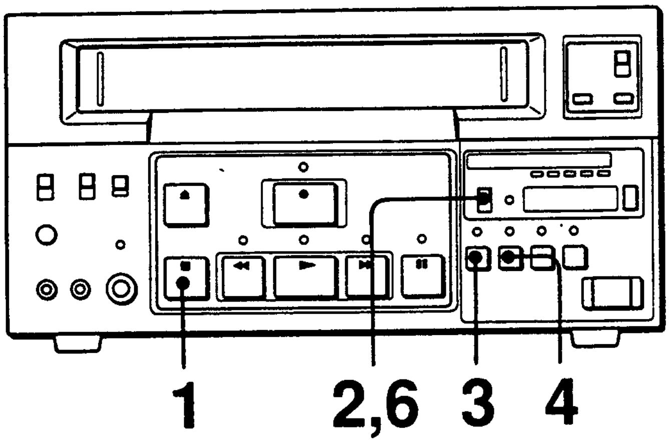
Using a Remote Control Unit RM-81/RM-91

Recording and playback can be started and stopped from the RM-81/RM-91 remote control unit (optional). For details on operations, refer to the instructions for the remote control unit. The operation modes of the remote control unit can be changed through a menu operation. For details, see "Menu Operations" (page 1-30).


SVO-9500MDP
to the REMOTE 2 connector
RM-81/
RM-91

1-8. MENU OPERATIONS

Operation modes of the recorder can be set as follows.



1 Set the recorder to stop mode.

2 Set the CTL/MENU switch to MENU.
The items which can be set are displayed on the time counter block. (See the next page.)

3 Press the ITEM button to select the item to be set.

4 Press the DATA button to set the data for the selected item.

5 Repeat steps 3 and 4 for the necessary items.

6 Set the CTL/MENU switch to CTL.
The data specified in steps 3 and 4 are now stored.

Set item	Display	Set data
VISS operation mode	uIA- $\boxed{\text{On}}$ -OF	To automatically mark VISS index signals. To manually mark VISS index signals.
Foot switch operation mode	FOt- $\boxed{\text{LE}}$ -LL -HE	To use the low edge of a pulse as the trigger. To turn on/off at the lower level of a pulse. To use the high edge of a pulse as the trigger.
Tape end operation mode	tPE-rE -St $\boxed{\text{Et}}$	To automatically rewind the tape from the end in recording mode. To automatically stop the tape at the end in recording mode. To automatically eject the cassette at the end of the tape in recording mode.
S-VHS recording selection	SuH- $\boxed{\text{At}}$ -OF	To automatically record on an S-VHS tape with the S-VHS system and on a VHS tape with the VHS system. To record on both S-VHS and VHS tape with the VHS system.
Digital CNR ON/OFF	Cnr- $\boxed{\text{On}}$ -OF	To turn on the digital chroma noise reducer. To turn off the digital chroma noise reducer.
Digital YNR ON/OFF	Ynr- $\boxed{\text{On}}$ -OF	To turn on the digital luminance noise reducer. To turn off the digital luminance noise reducer.
Digital Y enhancer ON/OFF	YEn- $\boxed{\text{On}}$ -OF	To turn on the digital enhancer. To turn off the digital enhancer.
Freeze mode selection	FrE- $\boxed{\text{Fr}}$ -FI	To initially display a frame freeze picture. To initially display a field freeze picture.

☐ : Factory setting

1-9. TROUBLESHOOTING

Should you have a problem on your recorder, first check the three items in Check 1 and then the appropriate item in Check 2 or Check 3.

CHECK 1

1 Check that the AC power cord is firmly connected. (See page 8.)

2 Check that the POWER switch is set to ON.

3 Check the connections. (See page 8.)

CHECK 2

Symptoms	Possible causes and corrective actions	Page for ref.
AUTO OFF lamp lights and function buttons do not function.	Moisture has condensed inside the unit. Keep the power on and wait until the lamp goes off indicating that the moisture has evaporated.	34
The tape suddenly stops and function buttons do not function.	Eject the cassette and take up the leader tape manually.	—
The cassette cannot be ejected.	Turn off the recorder and contact your nearest Sony facility.	—

CHECK 3

Symptoms	Corrective actions	Page for ref.
A cassette cannot be inserted.	• Insert the cassette correctly. • Check whether another cassette has already been inserted. • Check whether the AUTO OFF lamp is lit.	— — 34
The tape does not run when any of the function buttons is pressed. Recording cannot be done.	• Check that the REC lamp is lit. • Check that the safety tab on the rear of the cassette is in place. • Check that the PROGRAM switch is set at OFF.	— 10 —
Snow or streaks appear on the playback picture.	• Adjust the TRACKING control. • Clean the video head.	17 34

Moisture condensation

When the unit is moved directly from a cold place to a warm place, or when the unit is operated in a place with high humidity, moisture may condense inside the unit. If the tape runs in this condition, it may adhere to the head drum or the tape guide and be damaged. To prevent this possibility, the unit is equipped with a moisture detector. The AUTO OFF lamp lights to indicate that moisture has been detected inside the unit. When this lamp is lit, the cassette is automatically ejected, if it is inserted, and the unit does not function, even if any of the function buttons is pressed.

- When the unit is first moved to place in which it is subjected to condensation, we **recommend you to wait for about ten minutes and to turn the power on** so that the moisture detector will operate.

Video Head Cleaning

If the picture temporarily disappears or if snow or noise show up in the picture

The video head may be contaminated and should be cleaned. Use the optional cleaning cassette and perform cleaning as follows.

1. Remove the cassette being played.
2. Insert the cleaning cassette in the same manner as standard cassettes.
3. Press the RESET button to set the tape counter to "0:00:00."
4. Press the PLAY ▶ button and the REC ● button simultaneously.
5. When the time counter indication reaches "0:00:30," press the STOP ■ button to stop the tape.
6. Remove the cassette.

Notes

- **Do not run a cleaning cassette for more than 30 seconds at a time.** Excessive use of the cleaning cassette will shorten the life of the heads.
- The tape counter does not function when no video signal is connected to the recorder. Count the time using a watch.
- Do not rewind the cleaning cassette every time it is used. Run the tape to its end, then rewind it.
- You can run through a cleaning cassette several times, although it does gradually become less effective.

Video Head Replacement

If picture quality is still deficient after cleaning, the video heads may need to be replaced. The life of the heads is approximately **500 to 1000 hours of use.** With this unit, the accumulated operation time of the heads can be checked as follows.

1. Set the PROGRAM switch to B🔁A .

2. Keep the RESET button depressed for amount 2 seconds.
   The total accumulated operation time of the head drum is now shown on the counter in 1-hour increments.

Regarding head replacement, please consult your Sony service facility.

SECTION 2
SERVICE INFORMATION

2-1. HOW TO REMOVE AND RE-INSTALL THE EXTERNALS

Remove the externals in the sequence ① Top panel → ② U case → ③ Front panel.

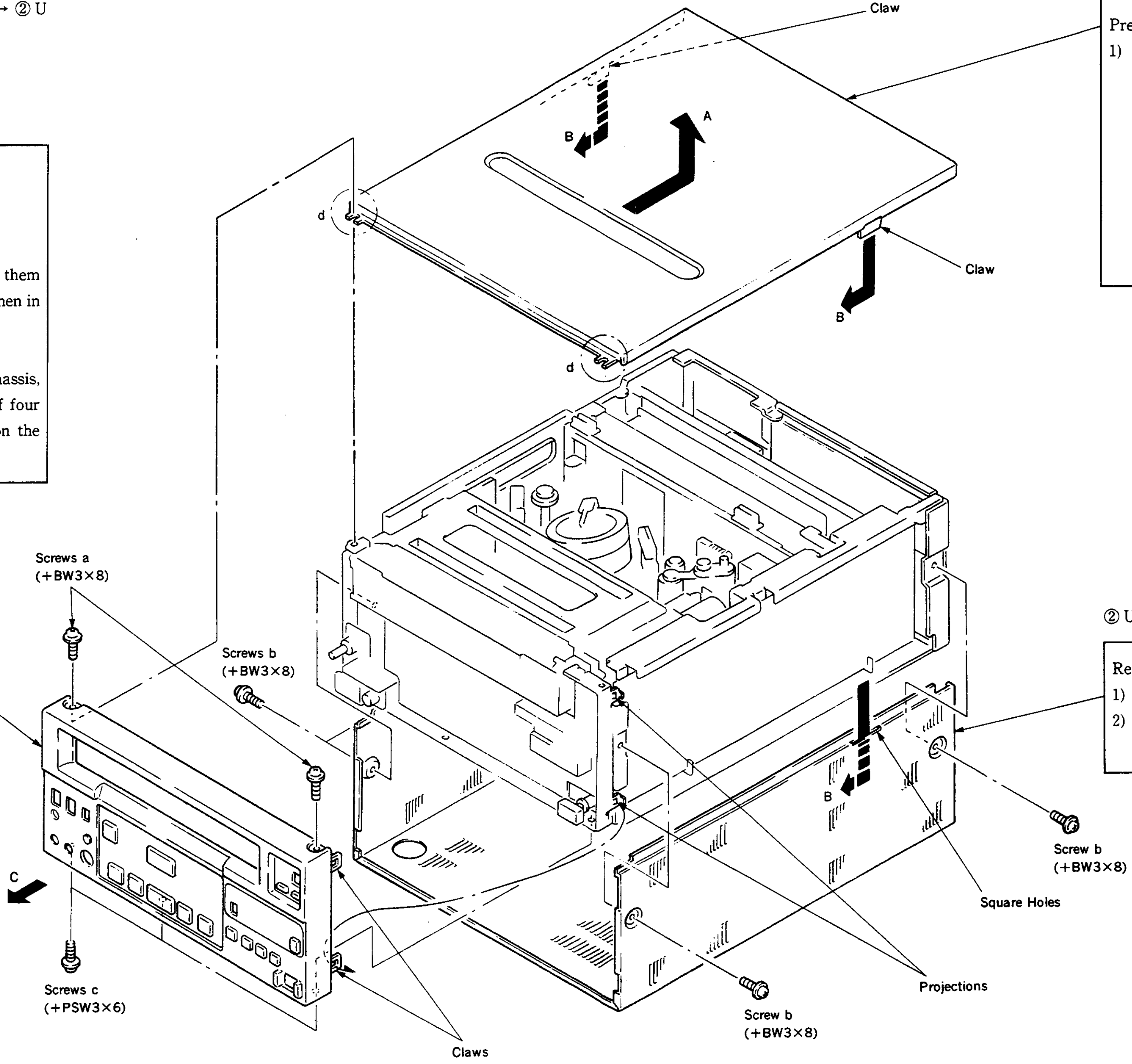
③ Front panel

Removal

1) Remove the top panel.
2) Remove the U case.
3) Remove three c screws.
4) Open four left and right claws slightly, disengage them from the projections in the chassis, and remove then in the direction of arrow C.

Precautions for re-installation

1) While aligning the boss with the hole in the chassis, push in the front panel until the square holes of four left and right claws lock into the projections on the chassis.


Claw
A
B
d
Claw
B
d
Screws a
(+BW3×8)
Screws b
(+BW3×8)
B
C
Screw b
(+BW3×8)
Square Holes
Screws c
(+PSW3×6)
Projections
Screw b
(+BW3×8)
Claws

① Top panel

Removal

1) Remove two screws a, then remove the panel in the direction of arrow A.

Precautions for re-installation

1) Insert two left and right claws into the square holes in the U case, then move the d part in the direction of arrow B and insert it between the front panel and the chassis. (Fig. 1)

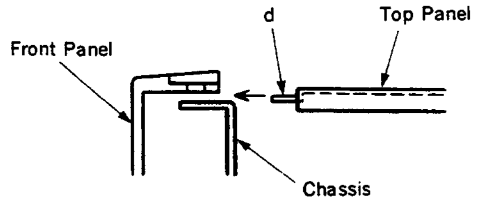

d
Top Panel
Front Panel
Chassis

Fig. 1

② U case

Removal

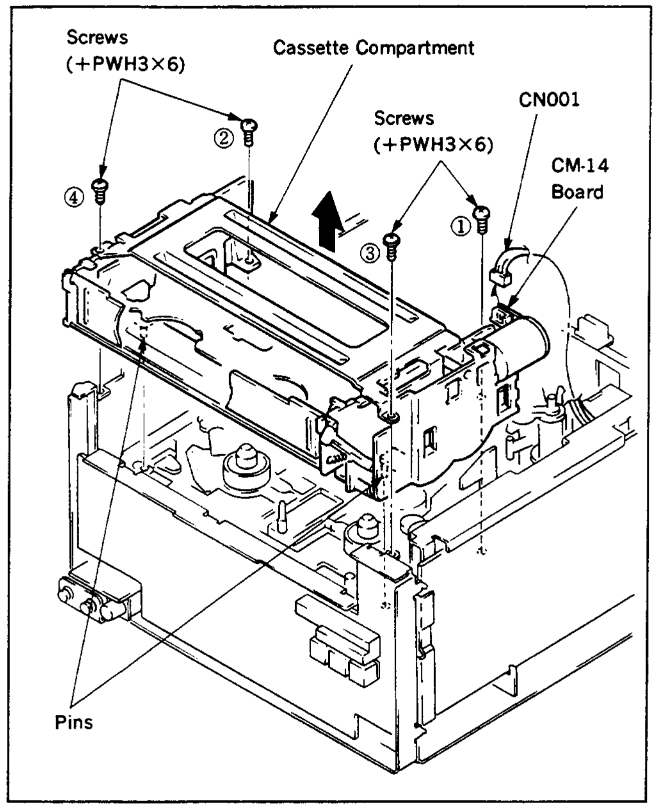
1) Remove the top panel.
2) Place the unit with the top face at the bottom, then remove four left and right screws b.

2-2. HOW TO REMOVE THE CASSETTE COMPARTMENT (FL ASS'Y)

1. Remove the top panel, U case and front panel according to sub-section 2-1.
2. Disconnect connector CN001 from the CM-14 board.
3. Remove four screws, then remove the cassette compartment in the direction of the arrow.

Precautions of re-installing the cassette compartment.

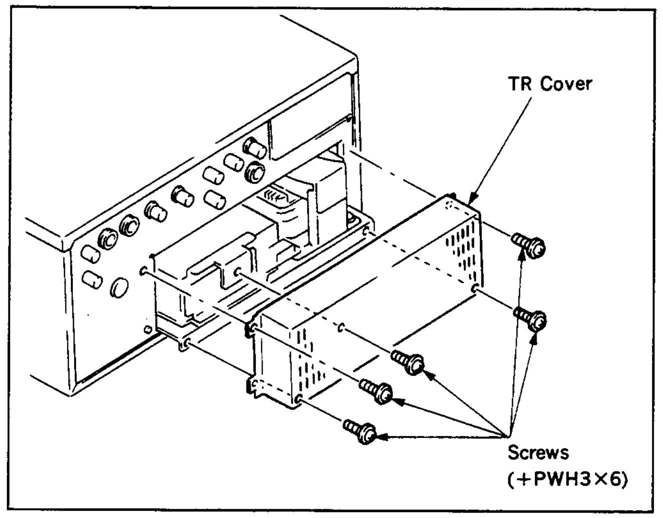
1) Align two pins of cassette compartment to the holes of mechanical shassis.
2) Fix the screws in order from ① to ④.


Screws
(+PWH3×6)
Cassette Compartment
CN001
Screws
(+PWH3×6)
CM-14
Board
①
②
③
④
Pins

2-3. HOW TO REMOVE THE POWER SUPPLY BLOCK

2-3-1. How to remove the DC-53A Board

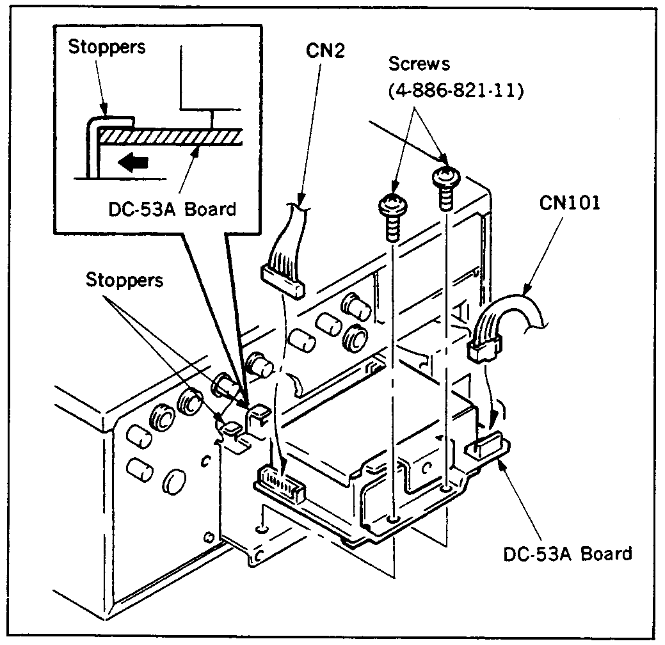
1. Remove five screws, then remove the TR cover.


TR Cover
Screws
(+PWH3×6)

2. Disconnect connector CN101 of power trans harness from the DC-53A board.
3. Remove two screws, then pull out the DC-53A board to the position of the figure.
4. Disconnect connector CN2 of power switch harness from DC-53A board.

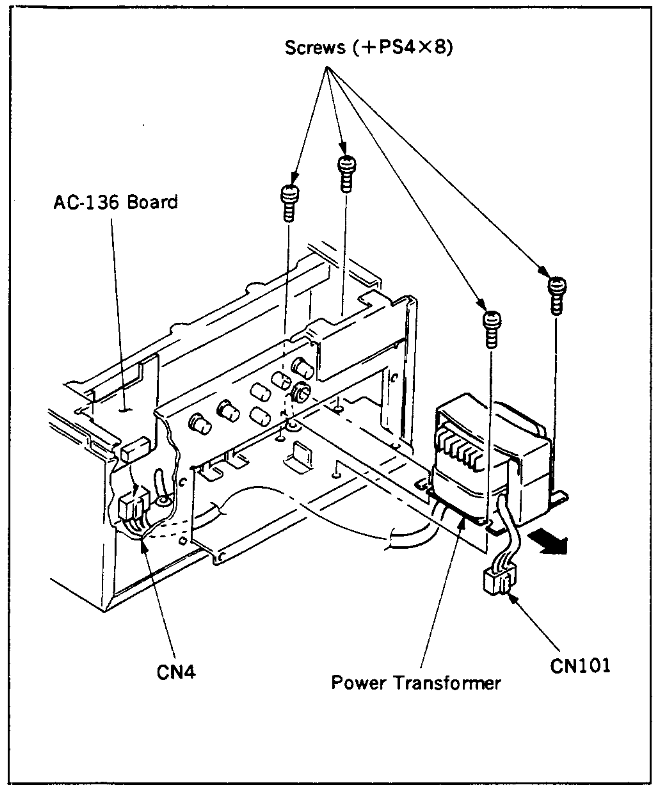
Precautions for re-installing the DC-53A board.

- Block the DC-53A board for stoppers of chassis, then install the DC-53A board.


Stoppers
DC-53A Board
Stoppers
CN2
Screws
(4-886-821-11)
CN101
DC-53A Board

2-3-2. How to remove the Power Transformer

1. Remove the top panel according to sub-section 2-1.
2. Remove the DC-53A board according to sub-section 2-3-1.
3. Disconnect connector CN4 of power trans harness from the AC-136 board.
4. Remove four screws, then remove power transformer in the direction of the arrow.


Screws (+PS4×8)
AC-136 Board
CN4
Power Transformer
CN101

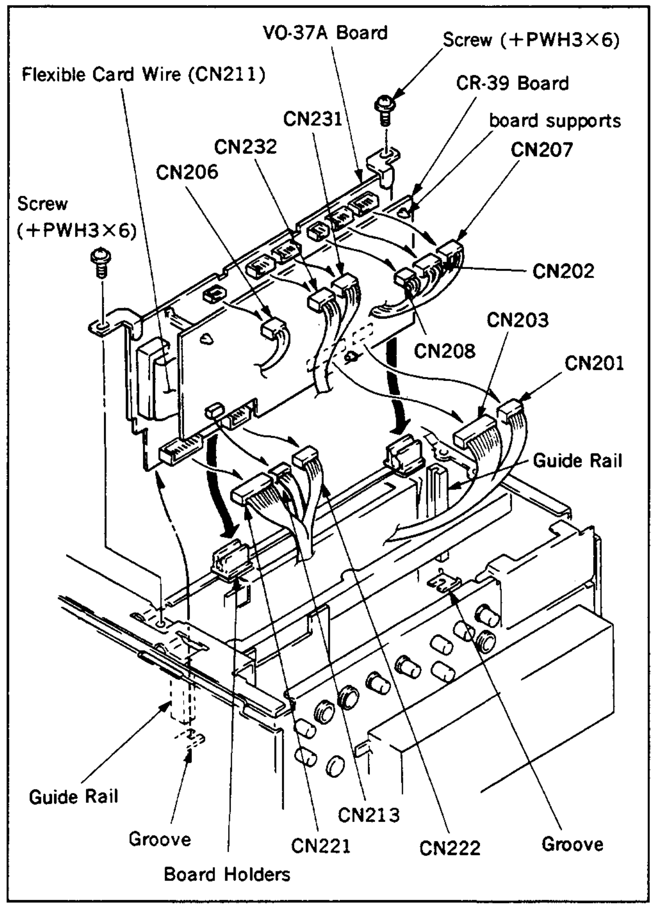
2-4. HOW TO REMOVE THE PRINTED CIRCUIT BOARD

2-4-1. How to remove the VO-37A and CR-39 Boards

1. Remove the top panel according to sub-section 2-1.
2. Remove two screws, and pull up the VO-37A/CR-39 boards.
3. Insert the VO-37A board into the two board holders for standing it.
4. Disconnect the connector CN213 of the CR-39 board. (S/N 10031 and higher)
5. Disengage three board supports from the CR-39 board, and open the CR-39 board.
6. Disconnect ten connectors (CN201, 202, 203, 206, 207, 208, 221, 222, 231 and 232) and the flexible card wire (CN211) of the VO-37A board.

Precautions for installation.

1) Align the VO-37A board with guide rails and grooves of the left/right chassis.
2) When S/N 10001 to 10031, CN213 of the CR-39 board dosen't connect with connector of harness.

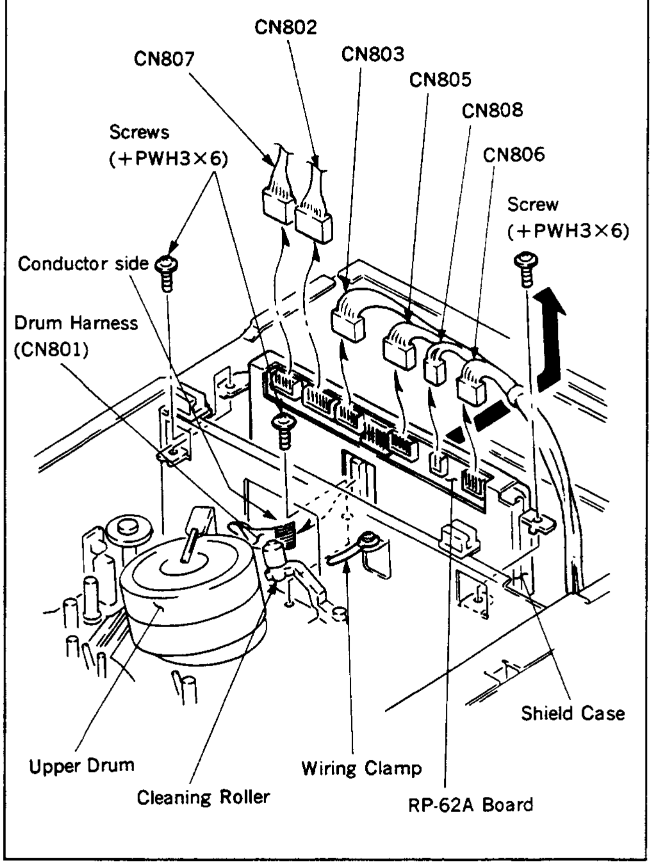

VO-37A Board
Screw (+PWH3×6)
Flexible Card Wire (CN211)
CR-39 Board
CN231
board supports
CN232
CN207
CN206
Screw
(+PWH3×6)
CN202
CN203
CN208
CN201
Guide Rail
Guide Rail
Groove
Board Holders
CN213
CN221
CN222
Groove

2-4-2. How to remove the RP-62A Board

1. Remove the top panel according to sub-section 2-1.
2. Remove harnesses from wiring clamp in the figure.
3. Disconnect six connectors (CN802, 803, 805 through 808) of the RP-62A board.
4. Remove the VO-37A/CR-39 boards according to sub-section 2-4-1. (Note that, there is no need to disconnect the connectors.)
5. Remove three screws, and then remove the drum harness from CN801 of the RP-62A board.
6. Remove the RP-62A board together with the shield case in the direction of the arrow.

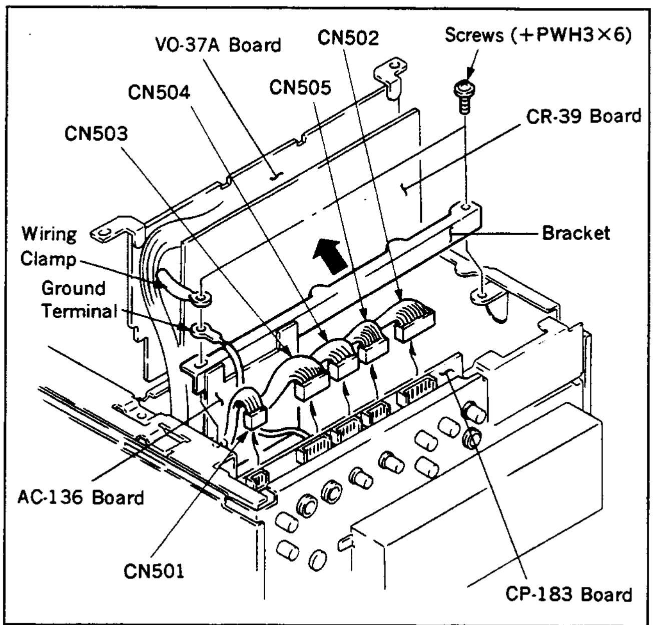
Precautions for installation.

1) Be careful of the direction of the connector side when re-connecting the drum harness.
2) Confirm that the drum harness does not touch the upper drum and the cleaning roller.
3) Fix the harnesses of the connectors CN803, 805, 806 and 808 with wiring clamp.

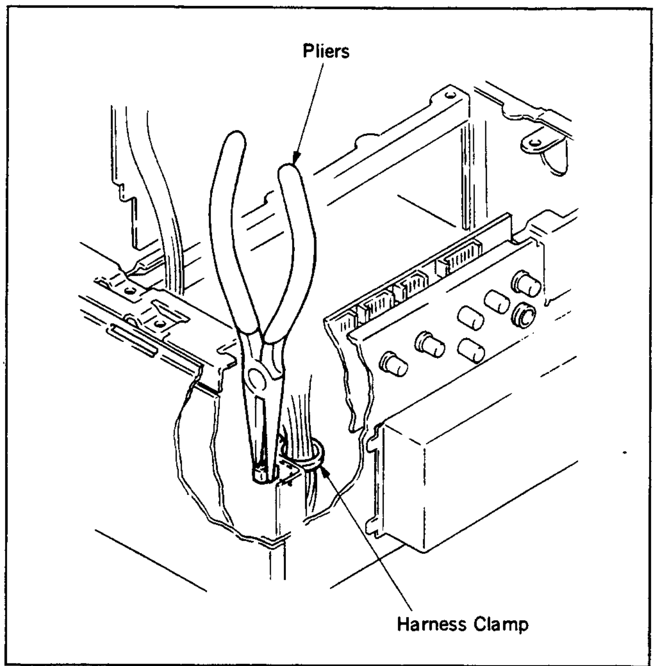

CN802
CN807
CN803
CN805
CN808
Screws
(+PWH3×6)
CN806
Screw
(+PWH3×6)
Conductor side
Drum Harness
(CN801)
Shield Case
Upper Drum
Wiring Clamp
Cleaning Roller
RP-62A Board

2-4-3. How to remove the CP-183 Board

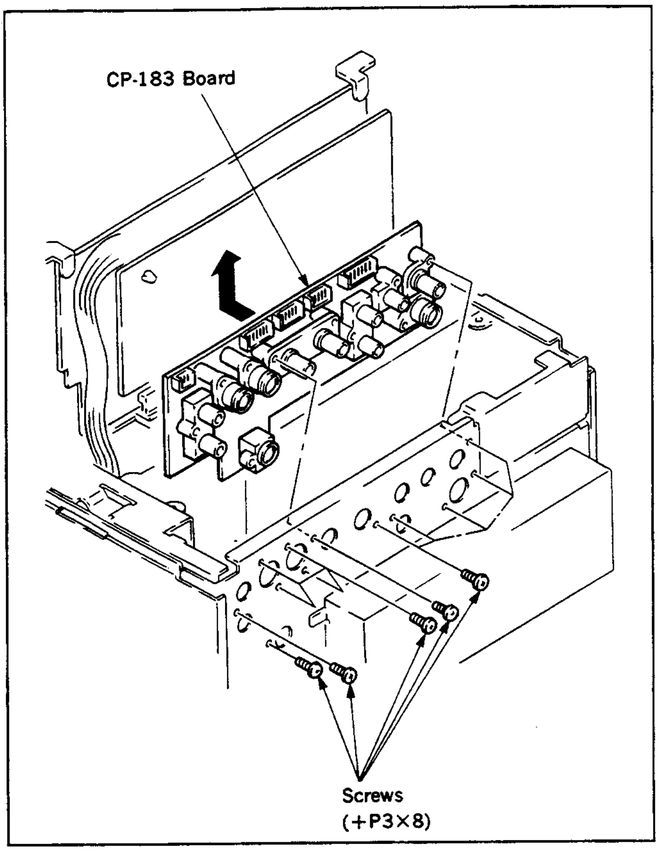
1. Remove the VO-37A/CR-39 boards according to sub-section 2-4-1. (Note that, there is no need to disconnect the connectors.)
2. Remove two screws, then remove the wiring clamp and ground terminal of the CP-183 board.
3. Move the bracket with the AC-136 board in the direction of the arrow.
4. Disconnect five connectors (CN501 through 505) of CP-183 board.


VO-37A Board
CN502
Screws (+PWH3×6)
CN504
CN505
CR-39 Board
CN503
Wiring
Clamp
Bracket
Ground
Terminal
AC-136 Board
CN501
CP-183 Board

5. Remove the harness clamp from the position of the figure with pliers.


Pliers
Harness Clamp

6. Remove twelve screws, then remove the CP-183 board in the direction of the arrow.

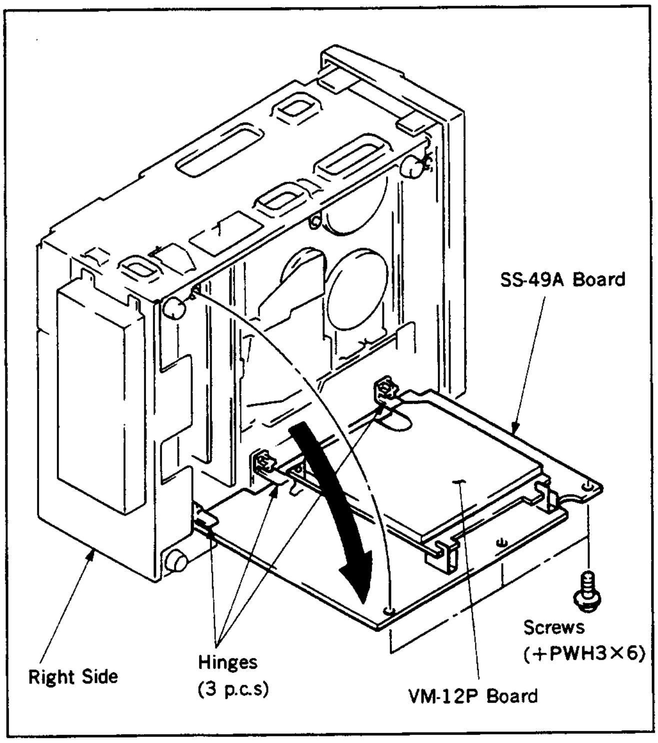

CP-183 Board
Screws
(+P3×8)

2-4-4. How to open the SS-49A Board

1. Remove the top panel and the U case according to subsection 2-1.
2. Stand up the VTR with the right side face downward.
3. Remove three screws, then open the SS-49A board in the direction of the arrow.

Removal method

1) Disconnect all of the connectors coming from the main unit, from the SS-49A board.
2) Remove three hinges from the SS-49A board.


SS-49A Board
Screws
(+PWH3×6)
Right Side
Hinges
(3 p.c.s)
VM-12P Board

2-5. MEMORY RETENTION FUNCTION OF NOVRAM (SS-49A BOARD)

The SS board has NOVRAM M6M80011AP (IC102) (F-7) which memorizes the hours meter and menu setting data. It also has a NOVRAM memory backup capacitor (C103) (L-2). If the SS board, the capacitor or the NOVRAM is replaced, the data set prior to replacement will be lost. It is thus necessary to make the initial settings for the NOVRAM then perform menu setting once again. In this case, however, the hours meter value will be cleared to zero, and cannot be set again. (If it is necessary to replace a part, it is recommended that you make a record of the data in the memory prior to replacing the part.)

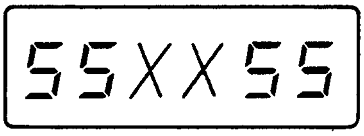
Procedure of initially setting the NOVRAM (same as factory setting)

(1) Set No. 1 and No. 5 switches of DIP switch S101 on the SS board (H-9) to ON.

(2) Short TP107 (D-9) and E5 (GND) (C-9) on the SS board with the shorting clip.

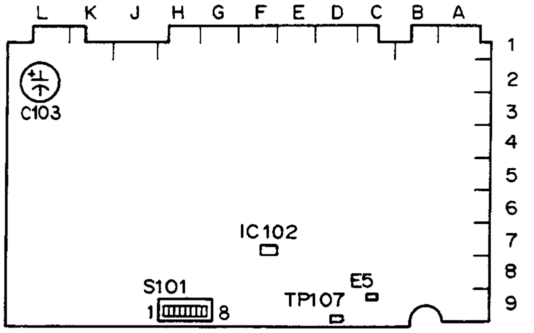
(3) Turn the tracking control on the front panel to the FIXED position, then turn the POWER switch ON.

(4) Wait until the following appears on the display on the front panel.



(5) Remove the shorting clip, then set No. 1 and No. 5 switches of S101 to OFF.

(6) Turn the POWER switch OFF.

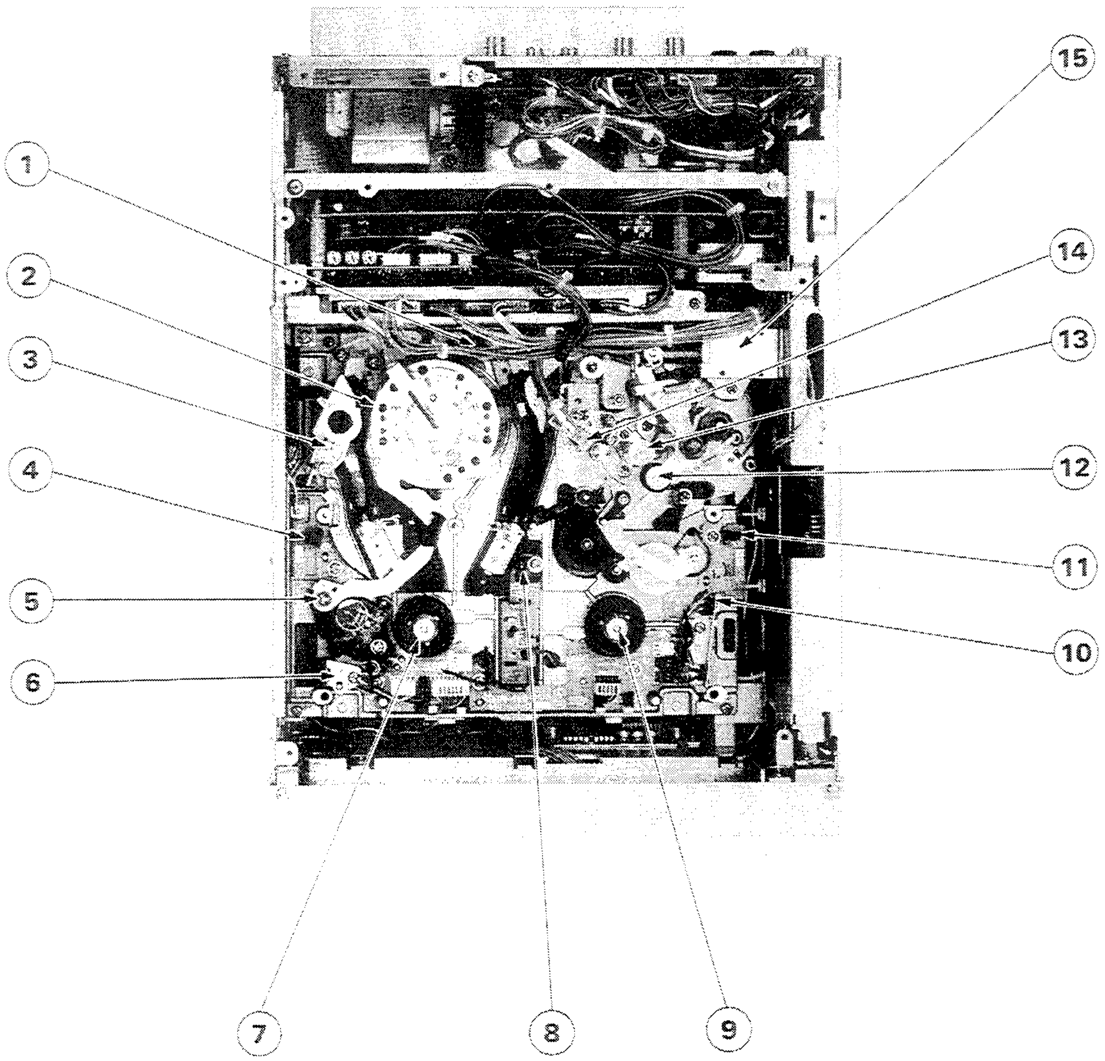


SS Board Component Side

2-6. LOCATION OF MAIN PARTS

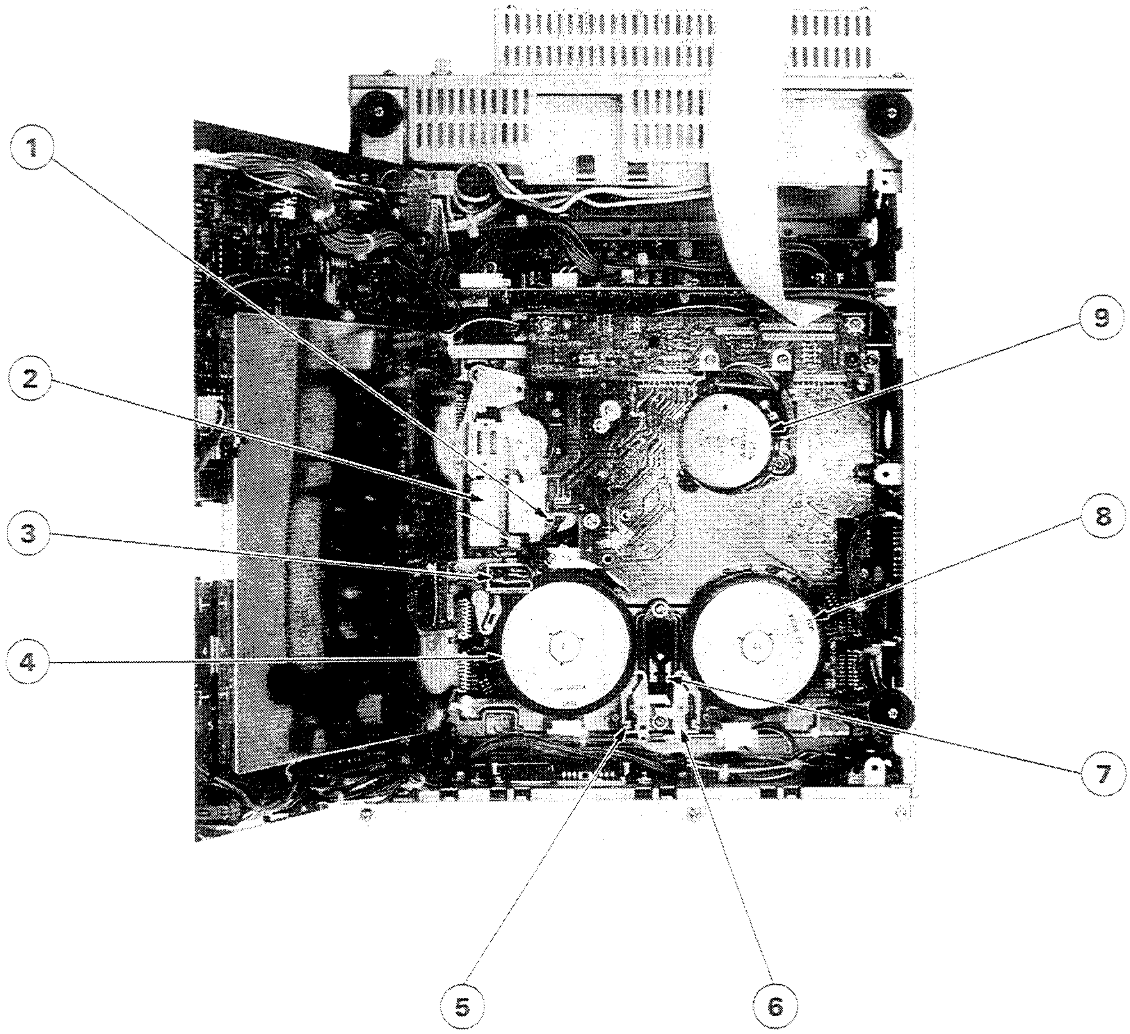
2-6-1. Location of the Main Mechanical Parts/Components

(TOP VIEW)



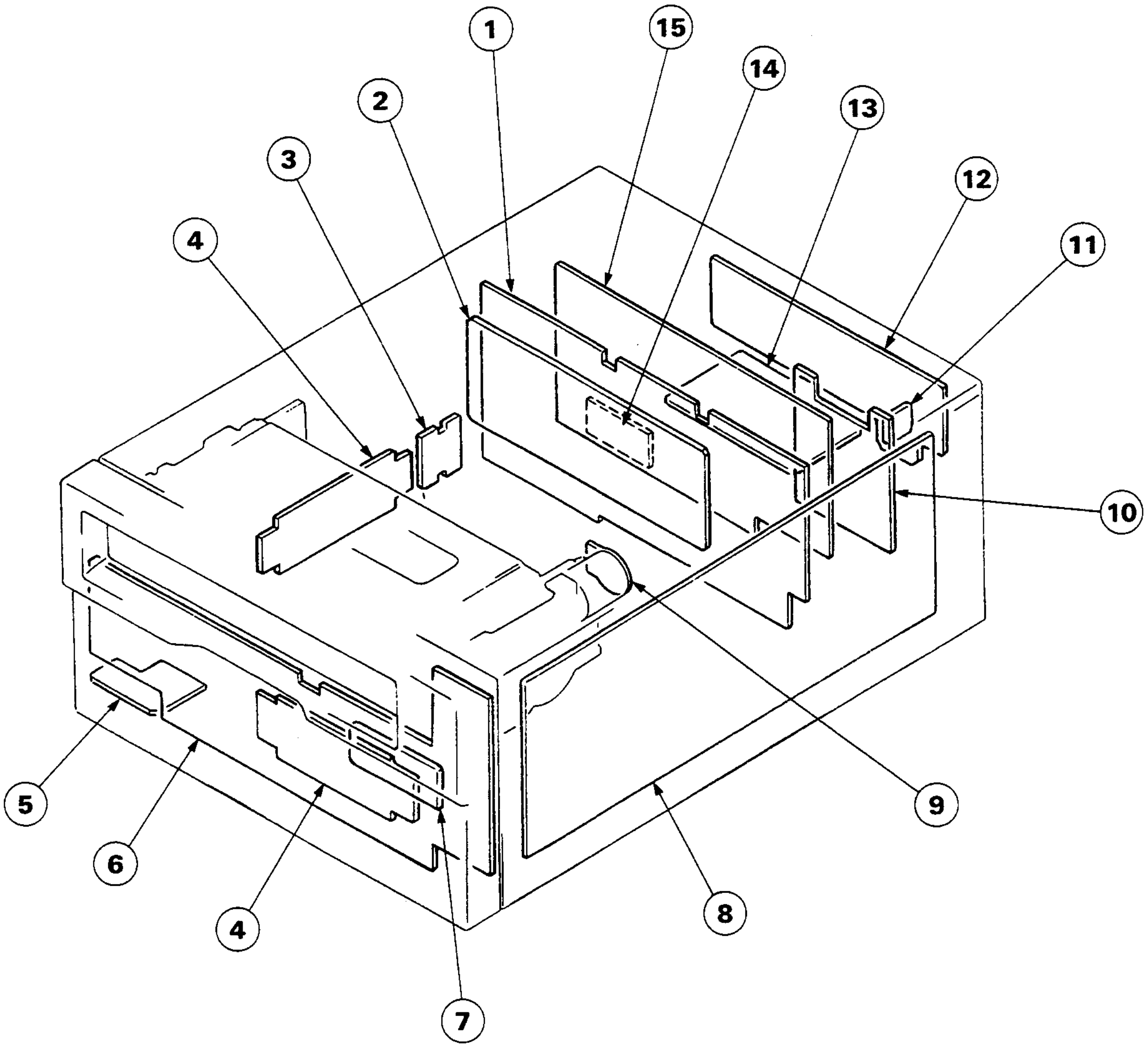
① Cleaning Roller	⑨ Take-up Reel Table
② Drum Assembly	⑩ Cassette Down Switch
③ Full Erase Head	⑪ Tape Top Sensor
④ Tape End Sensor	⑫ Pinch Roller
⑤ Tension Regulator	⑬ Capstan Shaft
⑥ Miss REC Switch	⑭ AUDIO/CTL Head
⑦ Supply Reel Table	⑮ Pinch Solenoid
⑧ Tape Top/End LED	

(BOTTOM VIEW)

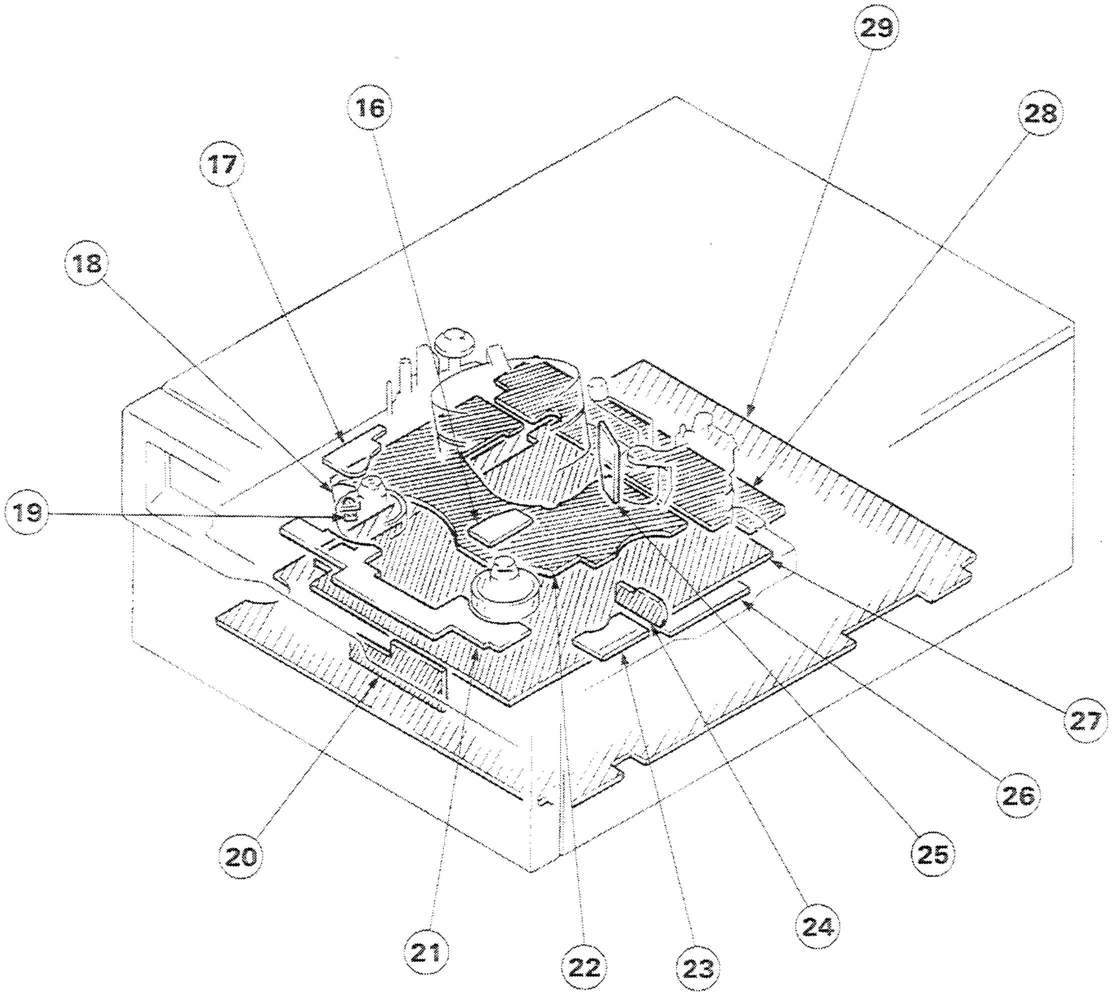


① Capstan Motor
② Cam Motor Assembly
③ LDB Brake Solenoide
④ Take-up Reel Motor
⑤ T • Brake Arm
⑥ S • Brake Arm
⑦ Brake Solenoid
⑧ Supply Reel Motor
⑨ Drum Assembly

2-6-2. Location of the Printed Circuit Boards



① VO-37A Board	⑨ CM-14 Board (Cassette Compartment)
② RP-62A Board	⑩ AC-136 Board
③ DUS-544 Board	⑪ DUS-442 Board
④ DR-153 Board	⑫ CP-183 Board
⑤ CN-633 Board	⑬ DC-53A Board
⑥ KY-219 Board	⑭ DUS-592 Board (Serial No. 10031 and higher)
⑦ DP-165 Board	⑮ CR-39 Board
⑧ AU-161A Board	


29
16
28
17
18
19
27
26
20
25
24
21
22
23

⑯ LE-80 Board	㉓ SE-152 Board
⑰ SE-151 Board	㉔ LD-35 Board
⑱ SE-159 Board	㉕ AH-28 Board
⑲ LE-86 Board	㉖ DUS-534 Board
⑳ DUS-445 Board	㉗ VM-12P Board
㉑ HN-160 Board	㉘ DR-176 Board
㉒ DR-167 Board	㉙ SS-49A Board

2-7. PRINTED CIRCUIT BOARD

SYSTEM	BOARD	CIRCUIT FUNCTION
VIDEO	RP-62A	Video & AFM Head Amp.
	CR-39	Chroma Process
	VM-12P	Chroma Noise Reducer/Video Memory/Chroma Encorder
	VO-37A (Include DUS-592)	Y/C Video Process
AUDIO	AU-161A	AFM Process/Normal Audio Process
	AH-28	Audio/Erase/CTL Head
SERVO • SYSTEM CONTROL	SS-49A (Include DUS-445 DUS-534)	Servo & System Control
	DR-153 (a)	T-Reel Driver
	DR-153 (b)	S-Reel Driver
	DR-167	CAM Mode Detect & Drum Motor Driver
	DR-176	Capstan FG Amp. & Capstan Motor Driver
	CM-14	Cassette Compartment Motor
	LD-35	Loading Motor
	LE-80	Tape Top/End LED
	LE-86	Tension Regulator LED
	KY-219	Function Key/LED/Switch
	DP-165	Counter Display
	SE-151	Tape End Sensor
	SE-152	Tape Top Sensor
	SE-159	Tension Regulator CDS Detect
	HN-160	Connection
	DUS-544	Connection
POWER	AC-136	AC Input
	DC-53A	AC-DC Power Regulator
CONNECTOR	CP-183 (Include DUS-442)	Connection of Rear Connector
	CN-633	Connection of Front Connector

2-8. CONNECTORS

When external cables are connected to the various connectors on the rear panel during maintenance, the hardware listed below (or equivalents) must be used.

PANEL INDICATION	CONNECTOR/HARDWARE
VIDEO IN VIDEO OUT	1-560-069-11 PLUG, BNC, MALE
VIDEO IN (S VIDEO) VIDEO OUT (S VIDEO)	YC-15EV (1.5 m), YC-30EV (3 m), SYC-2 (2 m), or SYC-5 (5 m) : CABLE (Option)
AUDIO IN AUDIO OUT MONITOR OUT	1-506-138-11 PLUG, PHONO
INDICATE	SVAC-100 (Option)

2-9. CONNECTOR INPUT/OUTPUT SIGNAL

The audio/video connector INPUT/OUTPUT signals of the connector panel are as follows.

INPUT

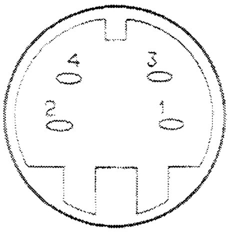
VIDEO IN : BNC type×2 for a bridging connection
$1.0\pm^{1}_{0.5}$ V p-p, 75 ohms, Unbalanced, Sync negative
S VIDEO IN : 4-Pin mini DIN×2 for a bridging connection (See below)
Luminance signal : 1.0 V p-p, 75 ohms, Unbalanced
Color signal : 0.3 V p-p, 75 ohms, Unbalanced
AUDIO IN : Phono jack×2
CH-1/L, CH-2/R −10 dBs (0 dBs=0.775 Vrms), 47 kilohms, Unbalanced
MIC : Phone jack×1
−60 dBs (0 dBs=0.775 Vrms), 3 kilohms, Unbalanced

OUTPUT

VIDEO OUT : BNC type×1
1.0±0.2 V p-p, 75 ohms, Unbalanced, Sync negative
S VIDEO OUT : 4-Pin mini DIN×1 (See below)
Luminance signal : 1.0 V p-p, 75 ohms, Unbalanced
Color signal : 0.3 V p-p, 75 ohms, Unbalanced
AUDIO OUT : Phono jack×2
CH-1/L, CH-2/R −10 dBs (0 dBs=0.775 Vrms), (47-kilohm load), Unbalanced
MONITOR OUT : Phono jack×1
−5 dBs (0 dBs=0.775 Vrms), (47-kilohm load), Unbalanced

● S VIDEO Connector

⟨external view⟩

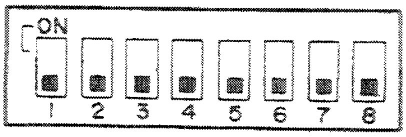


Pin No.	Signal
1	LUMINANCE(G)
2	COLOR(G)
3	LUMINANCE(X)
4	COLOR(X)

2-10. SWITCH SETTING

- SS-49A Board

S101 No.1 to No.8 : OFF (Shipped position)



Function of S101 switches (ON position)

S101-1. Error detection signal muting/tracking control center position detection.
Error detection signal muting : This switch disables error signals of system control block. Even though the machine operation is not stopped due to error detection, it can proceed to the next machine operation.
Tracking center position detection : Set the tracking control to center position when power is turned on while TP107 and GND are short-circuited, the center position of TRACKING control is stored in the form of DC voltage by microprocessor (IC101/SS-49A)

S101-2. E-E control signal muting : This switch disables the signal that mutes E-E signal.
Machine can enter E-E mode even in the mode where E-E mode is cancelled.
E-E can be established with the cassette whose record safety tab is broken.

S101-3. Always OFF

S101-4. Always OFF

S101-5. MENU initialize
The content of MENU setting is re-set into the default content of initial setting.

S101-6. Always OFF

S101-7. SERVICE mode : Ordinary maintenance work is done in OFF mode.

S101-8. TOP/END sensor muting
This switch mutes tape top and tape end detection signals.

2-11. HOW TO OPERATE THE CASSETTE COMPARTMENT ASS'Y AND ALSO THE VTR WITHOUT TAPE

(1) Remove the cassette compartment according to sub-section 2-2.

(2) Turn ON No. 8 switch of DIP switch S101/SS board (H-9). (This is to neutralize the tape top/end sensor function)

(3) Push down the CASSETTE DOWN switch with tape, etc.

(4) Turn the POWER switch ON.

In this condition, the VTR can be operated from the remote controller (RM-V200, RM-V100, SVRM-100 etc.).

Note : Be sure to turn No. 8 switch OFF after completion of operation.

[Operating the VTR with the cassette compartment removed and a cassette tape loaded]

- Be sure to turn OFF No. 8 switch of DIP switch S101. (If the DIP switch is turned ON, the tape will not stop at the tape top/end, resulting in possible damage to the head tip and deformation of the tape guide.)

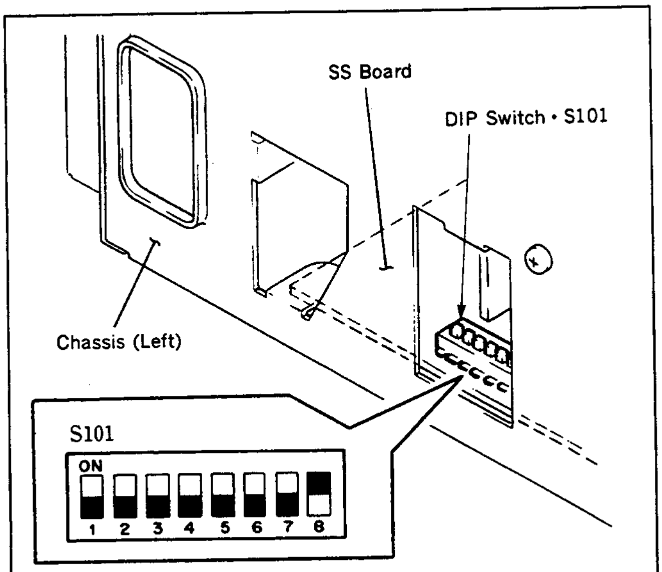


Fig. 1

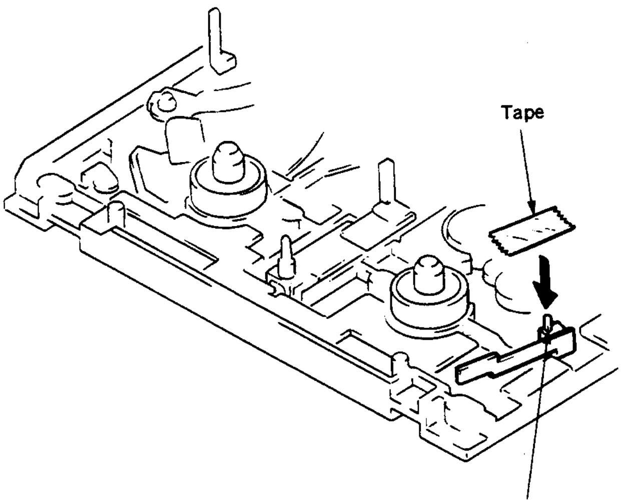


Fig. 2

2-12. HOW TO REMOVE CASSETTE TAPE WHEN IT CANNOT BE EJECTED

1. Remove the top panel and the U case according to sub-section 2-1.
2. Open the SS board according to sub-section 2-4-4.
3. Remove the screw, then remove the cam motor ass'y from the drive gear ass'y. (Fig. 1)
4. Rotate the worm wheel of the drive gear ass'y with the fingers in the direction of the arrow until the tape threading guides are in the unthreading end state. (Fig. 1)
5. Rotate the S side reel motor with the fingers in the direction of the arrow so that the tape is taken up into the cassette. (Fig. 1)
6. Rotate the loading motor of the cassette compartment ass'y with the fingers in the direction of arrow A, and eject the cassette. (Fig. 2)

How to re-install the cam motor ass'y

1) Fit the groove of the cam motor ass'y over the 'a' face of the drive gear ass'y. (Fig. 1)
2) Align the hole in the cam motor ass'y with the projection on the drive gear ass'y. (Fig. 1)
3) Set the cam motor parallel to the 'b' face of the drive gear ass'y, then screw it fixed. (Fig. 3)

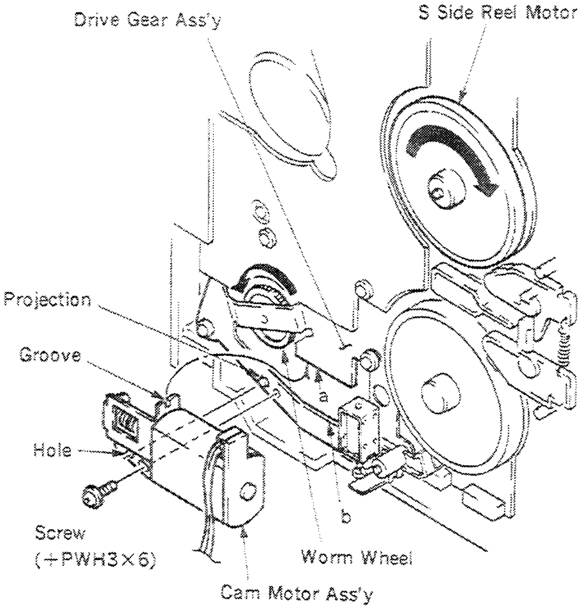

Drive Gear Ass'y
S Side Reel Motor
Projection
Groove
a
Hole
b
Screw
(+PWH3×6)
Worm Wheel
Cam Motor Ass'y

Fig. 1

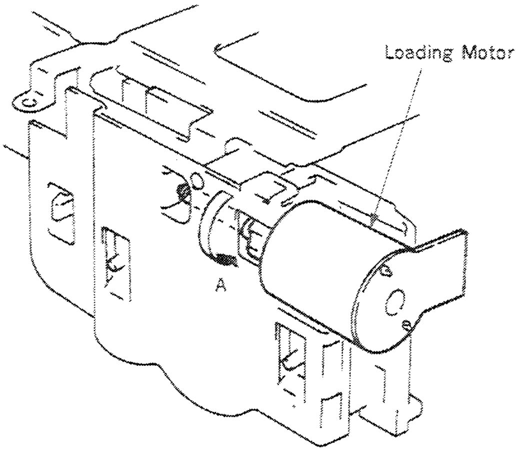

Loading Motor
A

Fig. 2

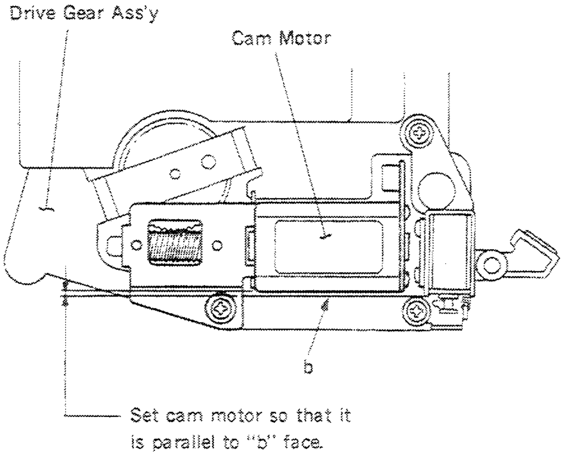
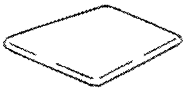

Drive Gear Ass'y
Cam Motor
b
Set cam motor so that it
is parallel to "b" face.

Fig. 3

2-13. FIXTURES

Ref. No	Part No.	Description	For Use
J-1	2-034-697-00	Cleaning Cloth	Cleaning
J-2	9-919-573-01	Cleaning Fluid	Cleaning
J-3	7-700-736-05	L-Shaped Hexagonal Wrench (1.5 mm)	Reel table ass'y replacement
J-4	7-700-736-06	L-Shaped Hexagonal Wrench (0.89 mm)	Guide roller ass'y replacement
J-5	9-911-053-00	Thickness Gauge	Guide roller ass'y replacement
J-6	H-7099-052-H	Alignment Tape, JVC-MH-2 (PAL)	Switching position adjustment
J-7	8-192-603-96	Alignment Tape, KRV-39PF	Audio alignment
J-8	Pending	Alignment Tape, KRV-45HPS (S-VHS)	Tape run alignment Video alignment
J-9	Pending	Alignment Tape, KRV-45PS (VHS)	Audio alignment Video alignment
J-10	8-192-602-48	Alignment Tape, KRV-4821PSA (PAL)	X Value adjustment, Tracking adjustment Audio Head adjustment
J-11	8-896-024-94	Reference Tape (Blank Tape), GR-120KG	Video and Audio alignment (VHS format only)
J-12	J-6380-710-A	X Value Adjustment Tool	X Value adjustment
J-13	H-7099-035-H	Torque Gauge Adaptor	S/T Reel table winding torque check
J-14	H-7099-039-H	Torque Gauge	
J-15	J-6380-040-A	RG Reference Pin (1)	Drive gear replacement
J-16	J-6380-050-A	RG Reference Pin (2)	
J-17	J-6380-080-A	Reference Plate	Reel table and tape guide height adj. Audio head azimuth and zenith adj.
J-18	J-6380-090-A	Reel Table Height Adj. Tool	Reel table height adjustment
J-19	J-6380-700-A	Master Block	Tape guide height adjustment Audio head azimuth and zenith adj.
J-20	J-6380-550-A	Master Block	Tape guide height adjustment
J-21	J-6080-840-A	Small Mirror	Tape run alignment
J-22	Standard Products	Tentelometer, T2-H7-UMC	Tape tension adjustment
J-23	Standard Products	Head Degausser	Head degauss
J-24 J-25	J-6082-044-A or J-6080-811-A	Tape Guide Adjustment Screwdriver	Tape guide height adjustment
J-26	7-700-751-02	Box Screwdriver (width 5.5 mm)	Tape run adjustment
J-27	J-6090-014-A or Standard Products	MOLYKOTE Grease EM-30LG MOLYKOTE Grease EM-30L (DOW CORNING Corp.)	Greasing
J-28	J-6381-380-A	S-BNC Video Cable	Video alignment
J-29	J-6381-370-A	RP Extension Tool	Video and Audio alignment
J-30	J-6381-910-A	Y/C Delay Adjustment Tool	Video alignment

J-1



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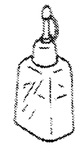
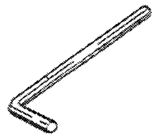


J-3, J-4



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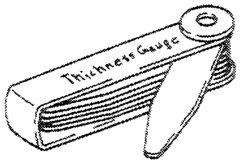
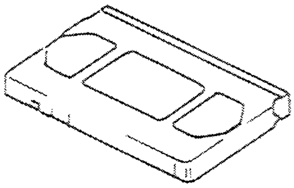

Thickness Gauge

J-6, J-7, J-8, J9, J-10, J-11



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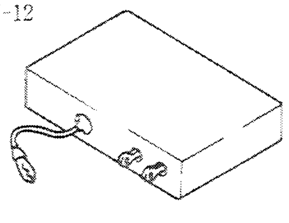

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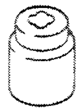

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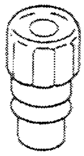

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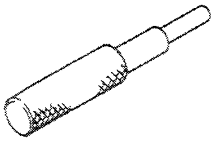

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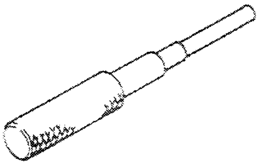

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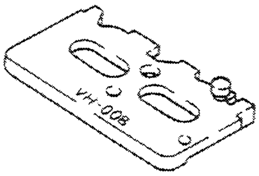
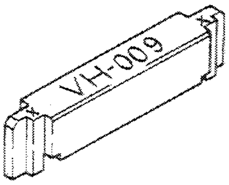
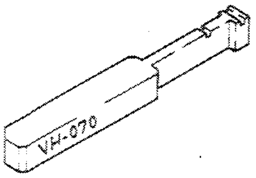


J-18



J-19



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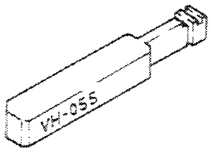

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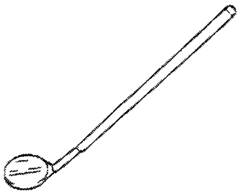

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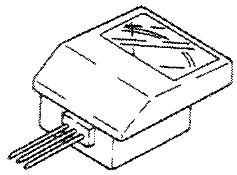

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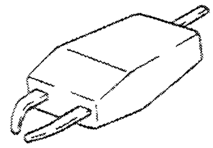

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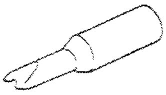
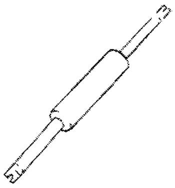


J-25



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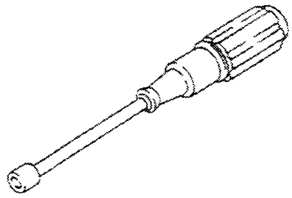

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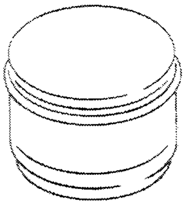

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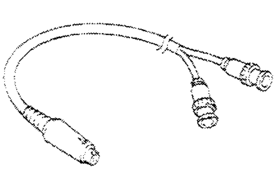
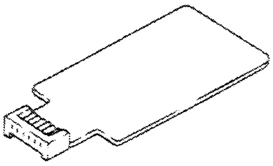
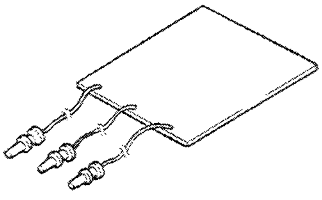


J-29



J-30



2-14. SPARE PARTS

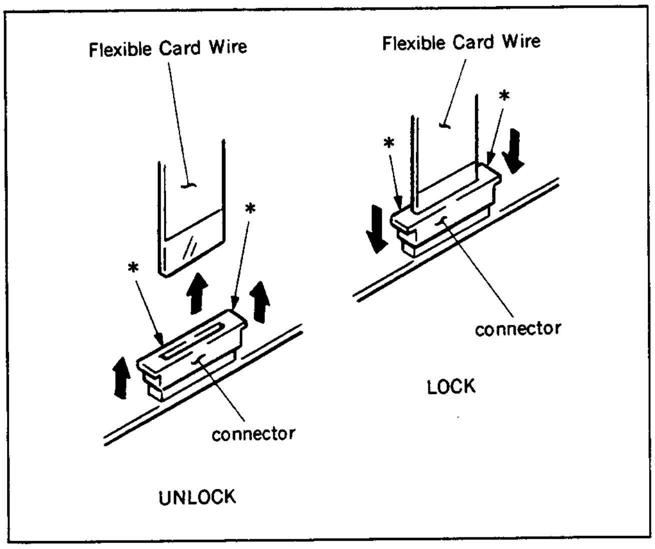
2-14-1. Spare Parts

(1) The ⚠ -marked components are critical to safety. Replace only with the same components as specified.
(2) Spare parts supplied from the Sony Parts Center will sometimes have a different shape from the original parts. This is due to the use of improved parts and/or to engineering changes or standardization of genuine parts. This manual's spare parts list indicate the part numbers of the standardized genuine parts in use at present. Regarding parts in our engineering department, refer to Sony service bulletins and service manual supplements.
(3) The parts marked with s in the SP column of spare parts list are normally stocked for replacement purposes. The parts marked with o in the SP column are not normally required for routine service work. Orders for parts marked with **o** will be processed, but allow for additional delivery time.

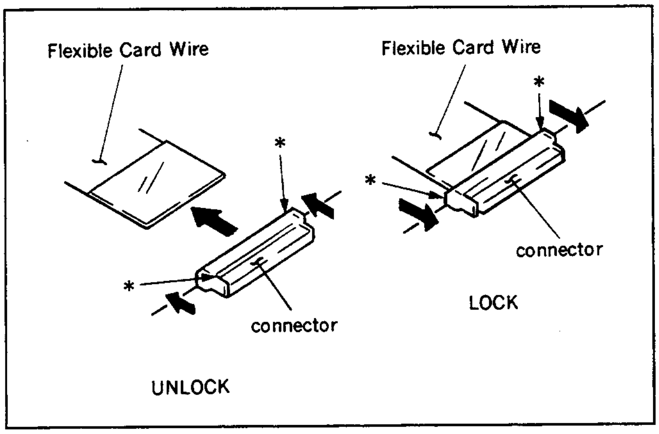
2-14-2. Replacement of Flexible Card Wires (20P, 26P, 28P)

20P flexible card wire is used on between the SS-49A board and the VM-12P board. 26P flexible card wire is used on between the CR-39 board and the VO-37A board. 28P flexible card wire is used on between the DR-176 board and the SS-49A board.
When handling a flexible card wire, be very careful not to bend it because this will markedly reduce its life.

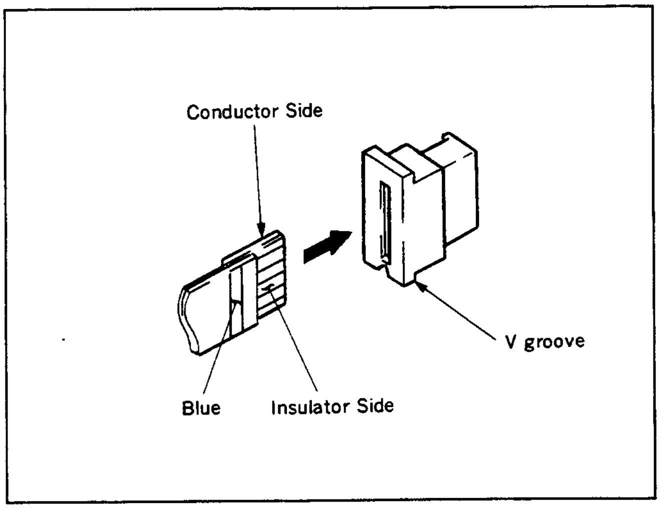
<Straight Type>
Disconnecting procedure
Pull up the * marked portions of connector, and pull out the flexible card wire from the connector.
Installing procedure
Install the flexible card wire as far as it will go (up the line indicated on the flexible card wire) and push down the * marked portions of connector.



<Angle Type>
Disconnecting procedure
Slide the * marked portions of connector in the direction of the arrow, and then pull out the flexible card wire from the connector.
Installing procedure
Insert the flexible card wire so that is conductor side is facing the printed circuit board, and insert it as far as it will go (up to the line indicated on the flexible card wire). Then slide it in the opposite direction of the arrow to lock.



Note : The flexible card wire consists of conductor side and insulator side. The flexible card wire must be inserted with the conductor side facing the correct way. If it is not the circuit will not work.



2-14-3. Replacement of Secondary Fuse

Power fuse is mounted on the AC-136 board. If the fuse has blown first remedy cause of trouble, replace the fuse.

1. Remove the top panel. (Refer to Sec.2-1)
2. Remove the fuse cover on the AC-136 board, and replace the fuse.

SECTION 3
PERIODIC CHECK AND MAINTENANCE

It is recommended that you carry out the following periodic checks and maintenance in order to obtain good performance and ensure a long life for the unit and tape. Use the hours-meter value displayed on the front panel as a guide for determining the check timing.

3-1. MAINTENANCE AFTER REPAIRS

Carry out the following maintenance after repair without regard to the operating hours of the unit.

(1) Cleaning Rotary Upper Drum
Press a cleaning cloth moistened with cleaning fluid lightly against Rotary Upper Drum and turn the Rotary Upper Drum slowly counterclockwise by means of a hand.

Note : Never turn the Drum by means of the unit is switched. Never turn it clockwise by means of a hand. If cleaning head chip, never move the cleaning cloth in vertical direction. You damage the head chip.

(2) Cleaning the tape run system (See drawing as shown below.)
Clean the tape run system (guides TG-1 to TG-9, RVS guide, F•R guide, capstan shaft, pinch roller, audio head, and FE head) with a cleaning piece moistened with cleaning fluid.

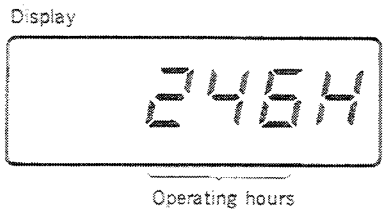
(3) Cleaning the drive system
Clean the surface of the reel table with a cleaning piece moistened with cleaning fluid.

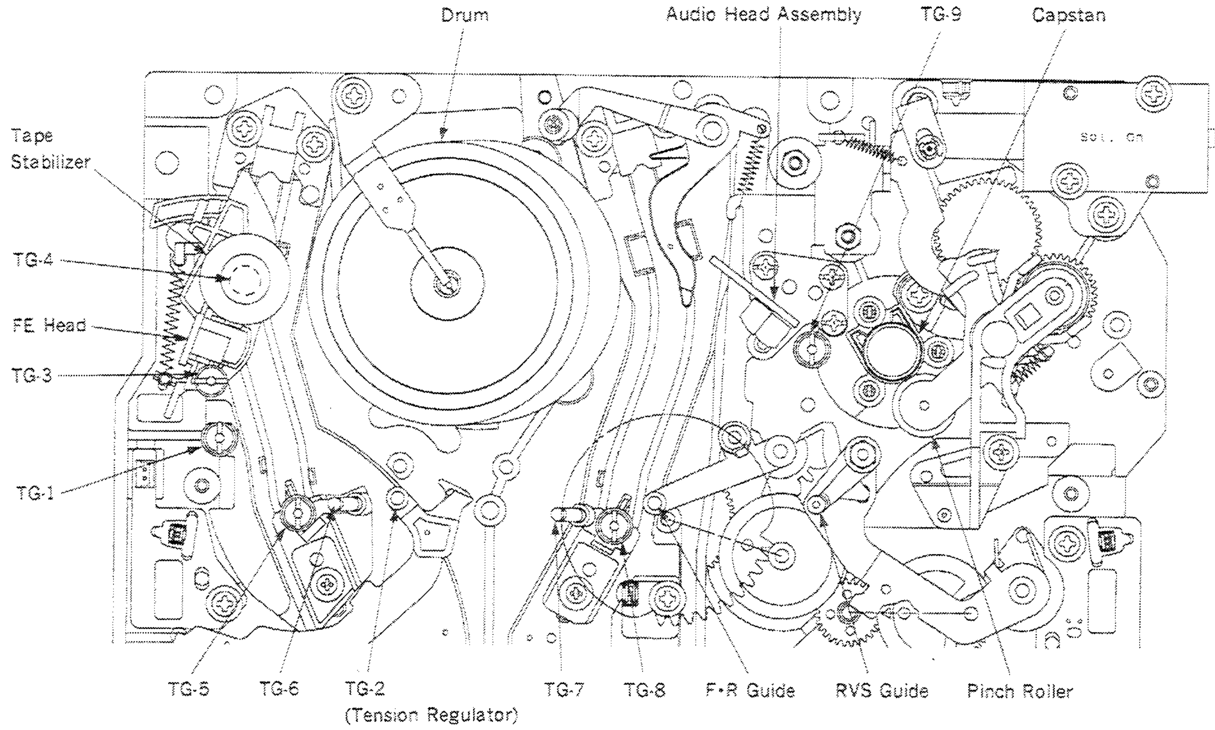
3-2. HOURS METER

The front panel display of this VTR can display the accumulated operating hours of the video heads.

● Procedure of displaying hoursmeter

1) Set the CTL/MENU switch of front panel to CTL.
2) Set the PROGRAM switch of front panel to B⟲A.
3) Keep the RESET button of front panel depressed for ammount 2 seconds.


Display
246H
Operating hours


Drum
Audio Head Assembly
TG-9
Capstan
Tape Stabilizer
TG-4
FE Head
TG-3
TG-1
SOL. ON
TG-5
TG-6
TG-2
(Tension Regulator)
TG-7
TG-8
F•R Guide
RVS Guide
Pinch Roller

3-3. PERIODIC CHECK

Carry out periodic checks and maintenance according to operating hours of the unit.

○ : Cleaning ◆ : Replacement ◇ : Checking □ : Greasing

Item			Hours of use (H) : Hour of Drum Rotation										Reference Section
	Part Name	Part No.	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	
Tape Run System	Tape Run surface	—	○	○	○	○	○	○	○	○	○	○	—
	(Note 1) Pinch Roller Block Ass'y	A-6750-279-C	○	○	○	◆/□	○	○	○	◆/□	○	○	4-12
	Audio Head Ass'y	A-6736-092-A	○	○	○	○	○	○	○	◆	○	○	4-10
	Guide Roller Ass'y	X-3165-337-1								◆			4-25,4-27
	Shaft Ground Ass'y	X-3165-584-1								◆			4-4
	FE Head	1-543-695-11	○	○	○	○	○	○	○	◆	○	○	4-8
	Capstan Motor (SCV-0401A)	8-835-480-02	○	○	○	○	○	○	○	◆	○	○	4-30
	Upper Drum Ass'y (DZR-41-R)	8-848-579-02	○	◆	○	◆	○	◆	○		○	◆	4-4
	Drum Ass'y (DZH-41A-R)	8-848-578-12	○	○	○	○	○	○	○	◆	○	○	4-5
Drive System	Brake Arm (S) Ass'y	X-3165-330-3								◆			4-18
	Brake Arm (T) Ass'y	X-3165-331-2								◆			4-18
	Reel Table Ass'y	X-3165-345-1				○				○			4-17
	LDB Arm Ass'y	X-3166-511-1								◆			4-32
	Cleaning Roller Ass'y	X-3743-515-4				◆				◆			4-3
	Reel Moter (SRV-0201A)	8-835-432-01								◆			4-19
	(Note 1) Loading Gear (Right) Ass'y	A-6750-281-A				□				□			4-22
	(Note 1) Worm Gear (Cam Motor Ass'y)	3-733-395-01				□				□			3-5
	(Note 1) Worm Gear (Cassette Compartment)	3-736-100-01				□				□			3-5
	(Note 1) Shuttle Slide Surface	—				□				□			3-5
Check Performance	Abnormal-noise	—	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	—
	S side Tape Tension Measurement	—		◇		◇		◇		◇		◇	5-2,6-2
	Reel Table torque Measurement	—				◇				◇			5-1

Note 1 : Grease the VTR according to sub-section 3-5.

Note 2 : The period shown in the table is not a guarantee value. The parts replacement period differs depending on the environment in which the VTR is used, so take the operating environment into consideration when drawing up a maintenance and check plan.

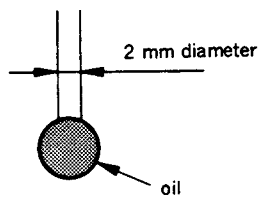
Note 3 : Be sure to clean the tape run surface after repairing it.

3-4. OILING

Oiling is described in 「SECTION 4. REPLACEMENT OF MAJOR PARTS」 for the applicable parts.

(1) Sony oil

- Be sure to use Sony oil. (If another brand of oil is used, the viscosity will be different, leading to trouble.)
  Sony oil : Sony part No. 7-661-018-18
- Be sure that the Sony oil used to lubricate the bearings is free of dirt and other foreign matter. (If the oil contains dirt, the bearings are liable to seize and also wear will be accelerated.)
- One drop of oil means a drop on the end of a rod of 2 mm diameter (see figure).



3-5. GREASING

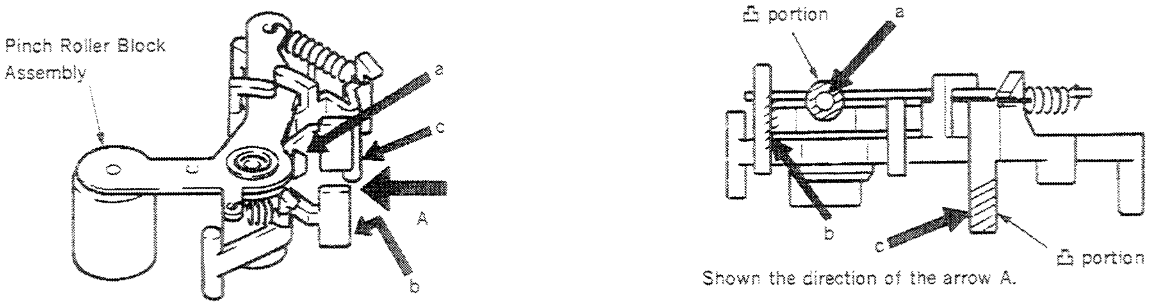
(1) Periodically grease the following parts.
- The face that slides against the cam of the pinch roller block ass'y (Fig. 1)
- The face that slides against the loading gear (right) ass'y (Fig. 2)
- The face that slides against the shuttle (left)/(right) ass'y (Fig. 3)
- Cam motor ass'y worm gear (Fig. 4)
- Cassette compartment worm gear (Fig. 5)

(2) Greasing
- Be sure to use the specified grease.
  MOLYKOTE grease EM-30LG (Color : green) :
  Sony part No. J-6090-014-A

or

MOLYKOTE grease EM-30L (Color : Colorless) :
DOW CORNING Corp.

Apply a small quantity of grease to the areas marked in the figure (shaded areas and other areas indicated by the arrows).


Pinch Roller Block Assembly
a
c
A
b
凸 portion
a
b
c
凸 portion

Shown the direction of the arrow A.

Fig. 1

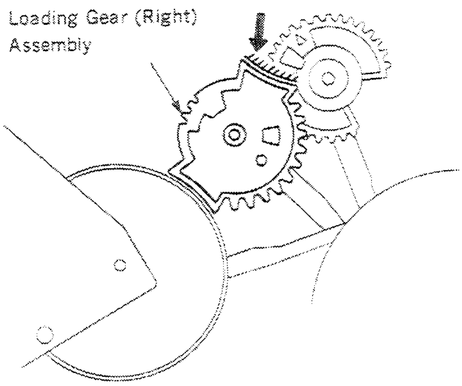

Loading Gear (Right) Assembly

Fig. 2

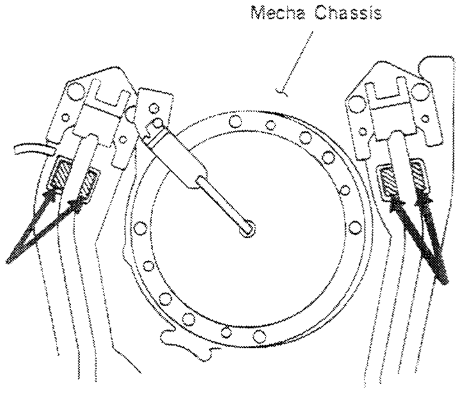

Mecha Chassis

Fig. 3

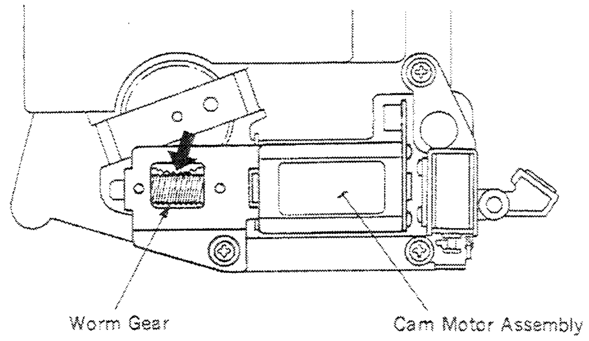

Worm Gear
Cam Motor Assembly

Fig. 4

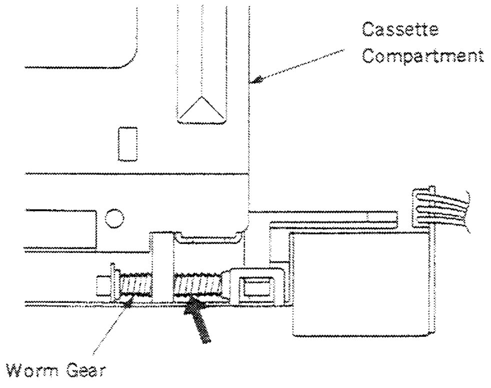

Cassette Compartment
Worm Gear

Fig. 5

SECTION 4
REPLACEMENT OF MAJOR PARTS

- Refer to Section 2 for details of removing the externals and the printed circuit boards.
- Re-install the various parts in the opposite sequence to removal, while referring to "Precautions for Installation".

4-1. PREPARATIONS FOR REPLACING PARTS

- Do not load or thread a cassette when the VTR is inverted.

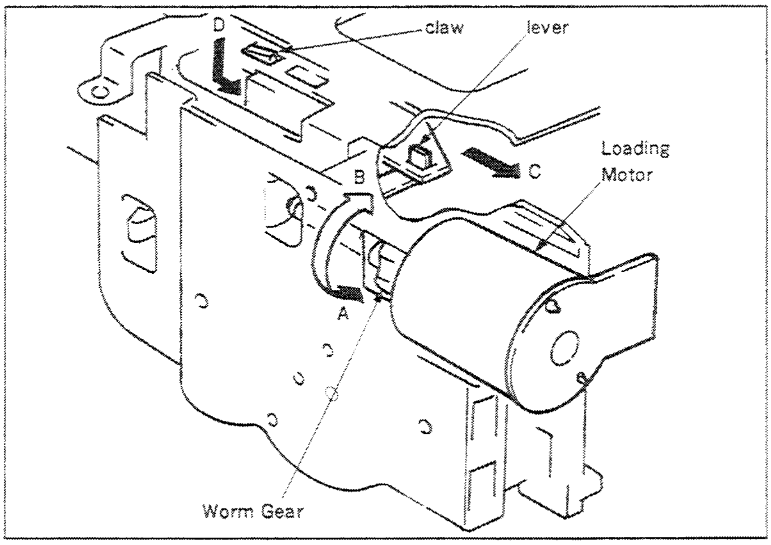
4-1-1. Method of Loading and Unloading the Cassette Compartment when the Power is OFF

[Loading]

- Push the lever in the direction of arrow C and release the claw (direction of arrow D), then rotate the worm gear in the direction of arrow B with the fingers until loading is completed.
  (When a cassette tape is loaded in the cassette compartment, the claw will automatically release.)

[Unloading]

- Rotate the worm gear in the direction of arrow A with the fingers until unloading is completed.


D
claw
lever
C
B
C
Loading Motor
A
Worm Gear

4-1-2. Method of Threading and Unthreading when the Power is OFF

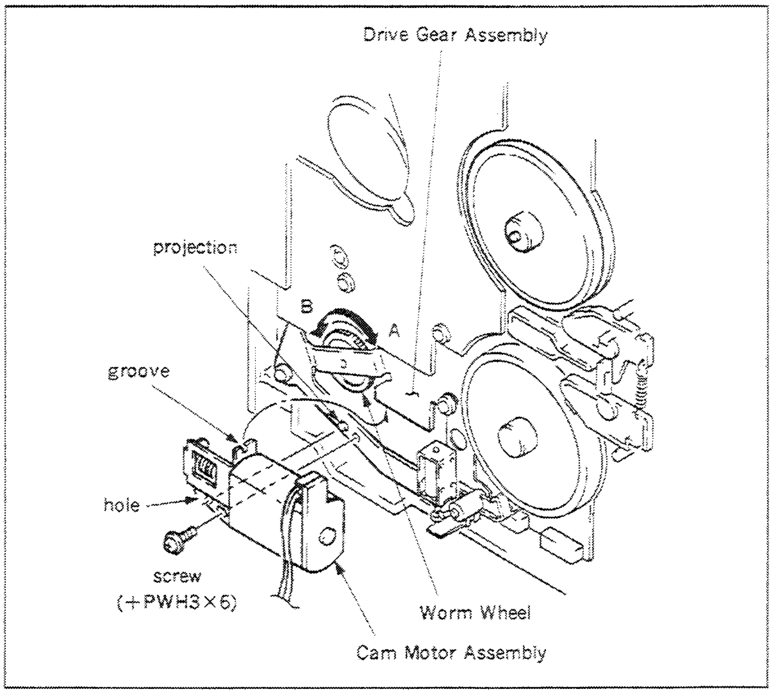
(1) Remove the screws, then remove the cam motor ass'y from the drive gear ass'y.

[Threading]

- Rotate the worm wheel with the fingers in the direction of arrow A until threading is completed.

[Unthreading]

- Rotate the worm wheel with the fingers in the direction of arrow B until unthreading is completed.

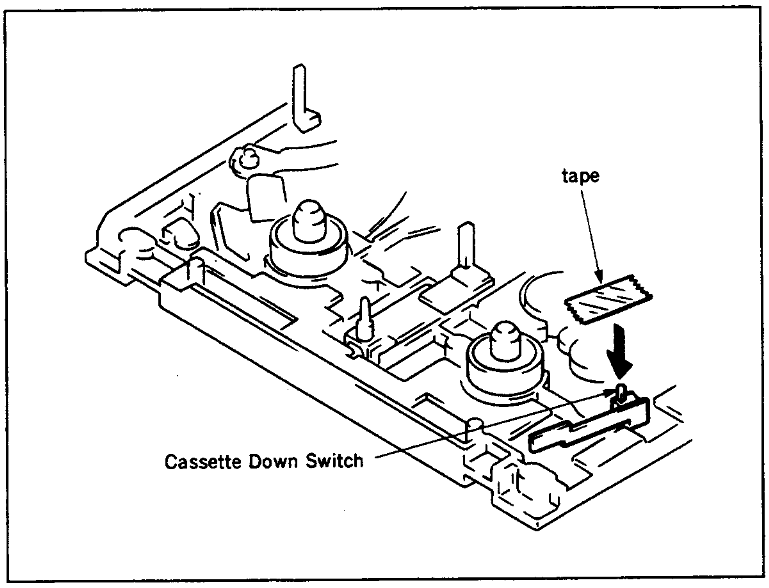

Drive Gear Assembly
projection
B
A
groove
hole
screw
(+PWH3×6)
Worm Wheel
Cam Motor Assembly

4-1-3. Method of Operating the VTR without a Cassette Compartment or Cassette Tape

(1) Remove the cassette compartment according to sub-section 2-2.
(2) Turn ON No. 8 switch of DIP switch S101/SS board (H-9). (This is to neutralize the tape top/end sensor function)
(3) Push down the CASSETTE DOWN switch with tape, etc.
(4) Turn the POWER switch ON.

In this condition, the VTR can be also operated from the remote controller (SVRM-100, RM-V200, RM-V100, etc.)

Note: Be sure to turn OFF No. 8 switch of DIP switch S101 after completion of operation.



[Operating the VTR with the cassette compartment removed and a cassette tape loaded]

- Be sure to turn OFF No. 8 switch of DIP switch S101.
  (If the DIP switch is turned ON, the tape will not stop at the tape top/end, resulting in possible damage to the head tip and deformation of the tape guide.)

4-1-4. How to get the best Engaging Phase of Gears when Replacing.

A hole and/or a mark is added on each gear in this mechanism deck so that the engaging phases of the gears are easy to get when assembling. When replacing gear, install it as shown below, also refer the figures 1 and 2. (The replacement should be performed on the STOP mode.)

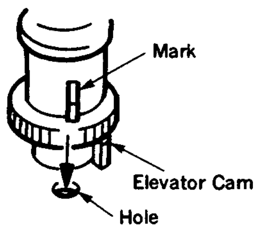
①	 Mark Elevator Cam Hole Match the mark of the elevator cam and the hole of the chassis. (Ref. 4-13)
②	Match the holes of the pressure cam gear and the chassis. (Ref. 4-13)
③	Match the holes of RVS cam gear and the chassis. (Ref. 4-14)
④	Match the holes of FR drive gear and the mode gear (2). (Ref. 4-16)

Figure of mechanism : STOP mode without the cassette compartment.

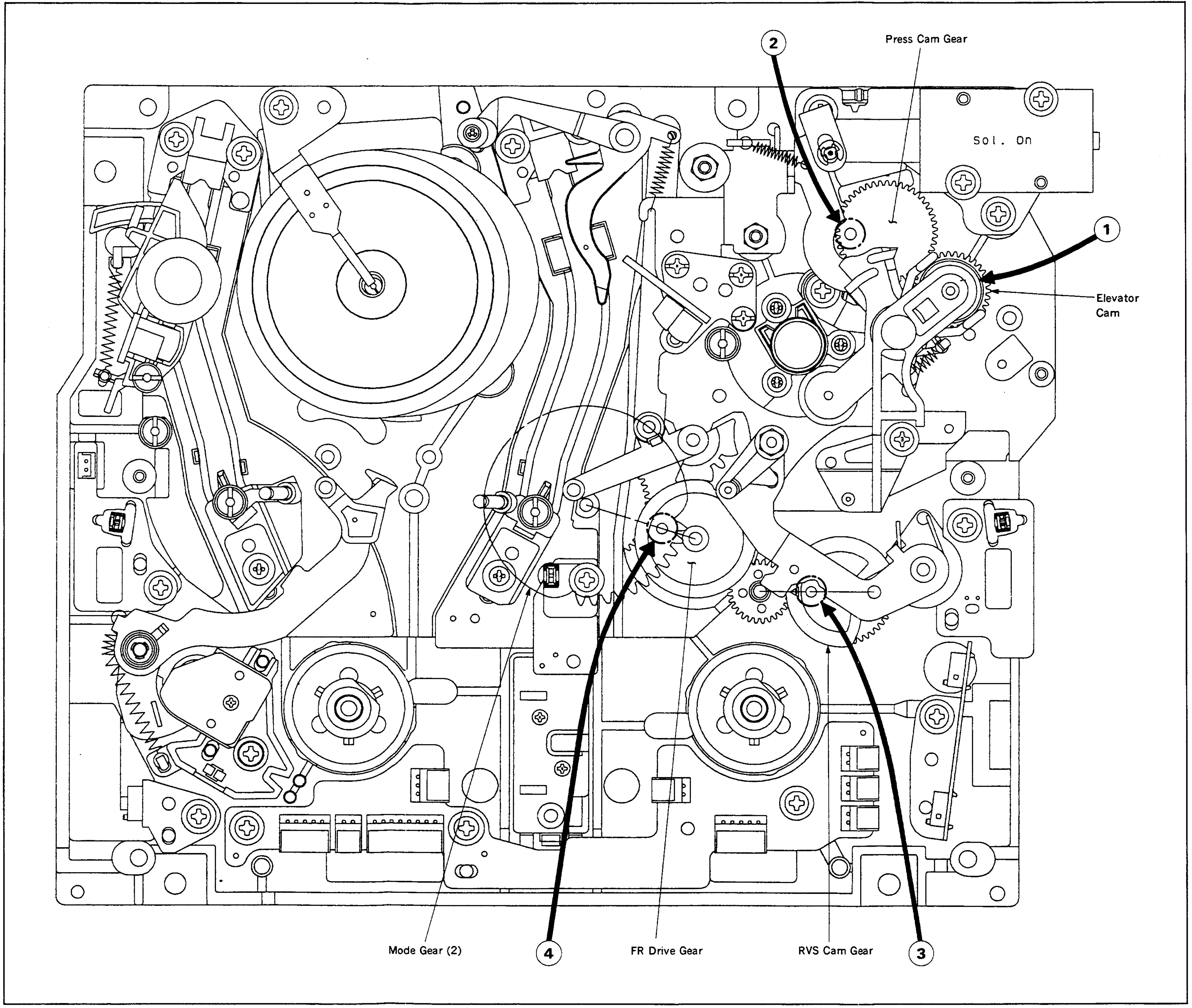

②
Press Cam Gear
Sol. On
①
Elevator Cam
Mode Gear (2)
④
FR Drive Gear
RVS Cam Gear
③

Fig. 1 Top View

Figure of mechanism : STOP mode

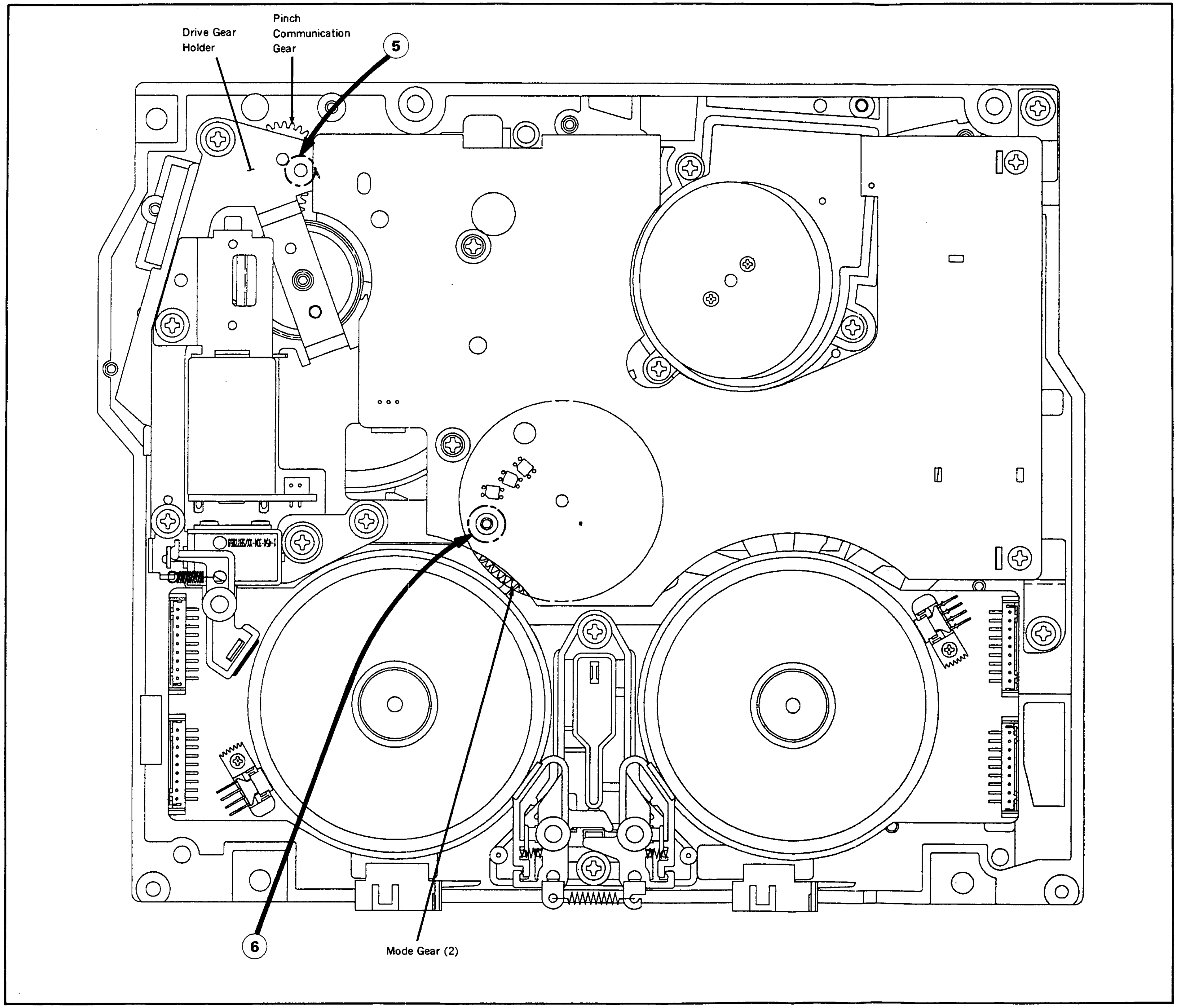

Drive Gear Holder
Pinch Communication Gear
5
6
Mode Gear (2)

Fig. 2 Bottom View

⑤	Match the holes of the pinch communication gear and the drive gear holder. (Ref. 4-20)
⑥	Match the holes of the mode gear (2) and the drive gear holder. (Ref. 4-20)

4-4

4-2. CASSETTE COMPARTMENT (FL ASS'Y) REPLACEMENT

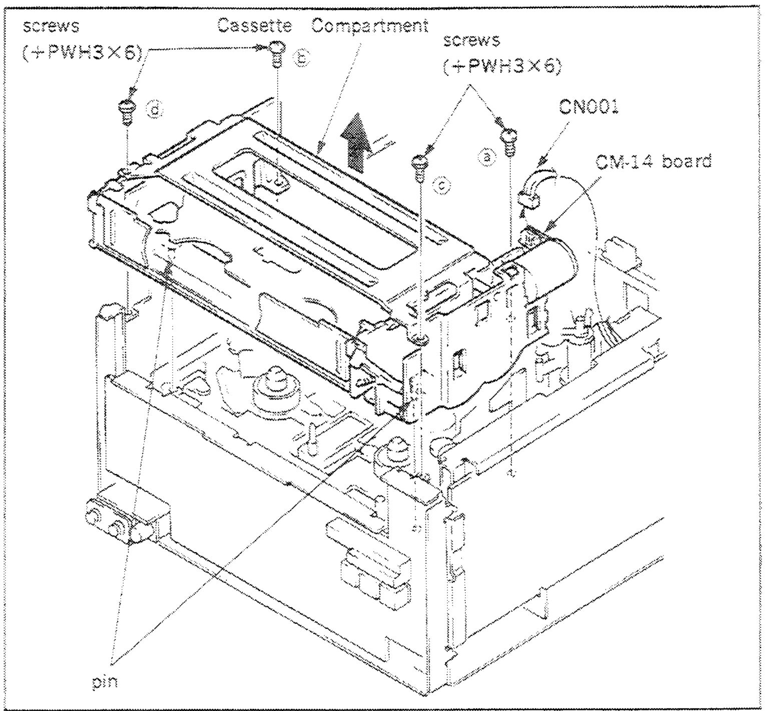
(1) Disconnect connector CN001 from the CM-14 board.

(2) Remove four screws, and remove the cassette compartment (FL ass'y) in the direction of the arrow.

Precautions for installation

①Align two pins of the cassette compartment with the holes in the base plate.

②Tighten the screws in the sequence ⓐ to ⓓ.


screws
(+PWH3×6)
Cassette Compartment
screws
(+PWH3×6)
ⓑ
ⓓ
ⓒ
ⓐ
CN001
CM-14 board
pin

4-2-1. Prevention Lever Replacement

(1) Remove the spring.

(2) Remove the claw, and move the prevention lever in the direction of arrow A.

(3) Remove the prevention lever in the direction of arrow B.

Precautions for installation

①The shaft of the prevention lever must enter the groove in the drive arm (left). (Fig. 2)

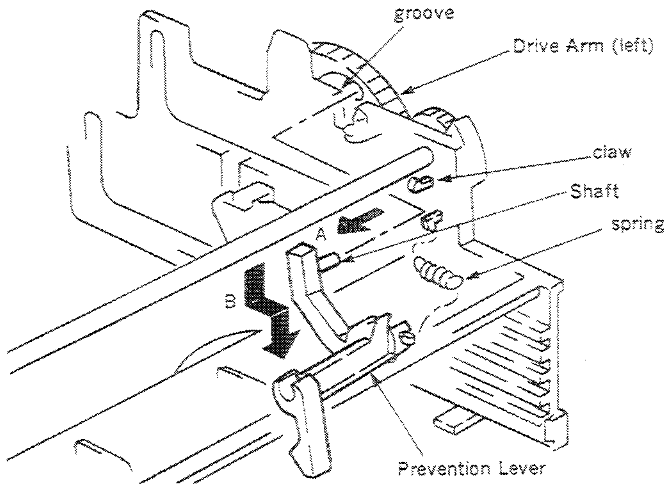

groove
Drive Arm (left)
claw
Shaft
spring
A
B
Prevention Lever

Fig. 1

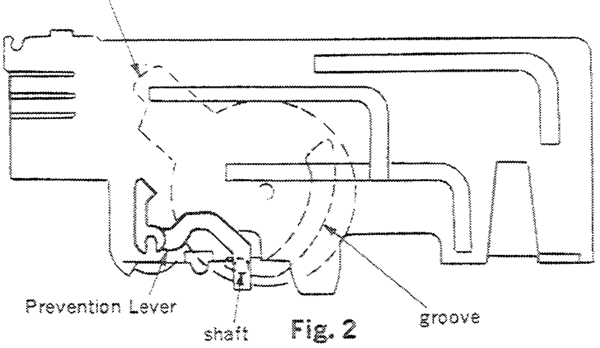

Drive Arm (left)
Prevention Lever
shaft
groove

Fig. 2

4-2-2. Loading Motor, Worm Gear (FL), Worm Wheel (FL) and Worm Retainer Replacement

(1) Remove four claws, then remove the gear cover ass'y. (Fig. 1)
(2) Remove the stop washer 3, then pull out the worm wheel (FL). (Fig. 2)
(3) Remove two screws, then remove the loading motor. (Fig. 2)
(4) Remove the worm gear (FL) and the worm retainer. (Fig. 2)

Precautions for installation

①To install the gear cover ass'y, obtain a shaft of 2 mm diameter and length of at least 30 mm. Pass the shaft through the holes in the gear cover ass'y, worm wheel (FL), drive arm (right) ass'y and right side plate, and engage the gear cover ass'y with the claw.

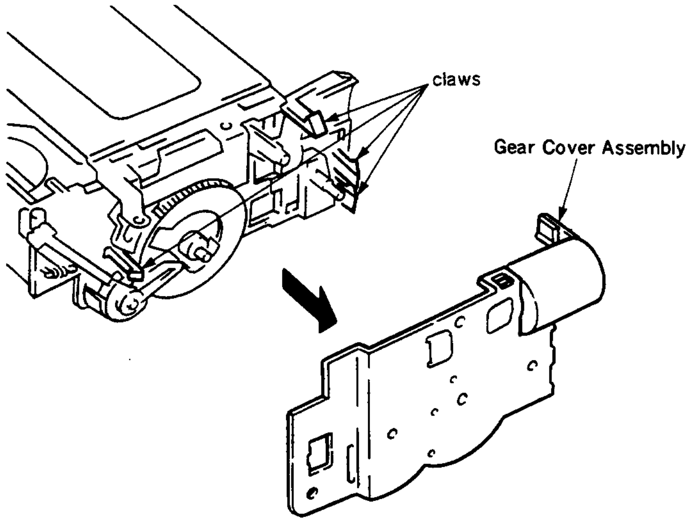

claws
Gear Cover Assembly

Fig. 1

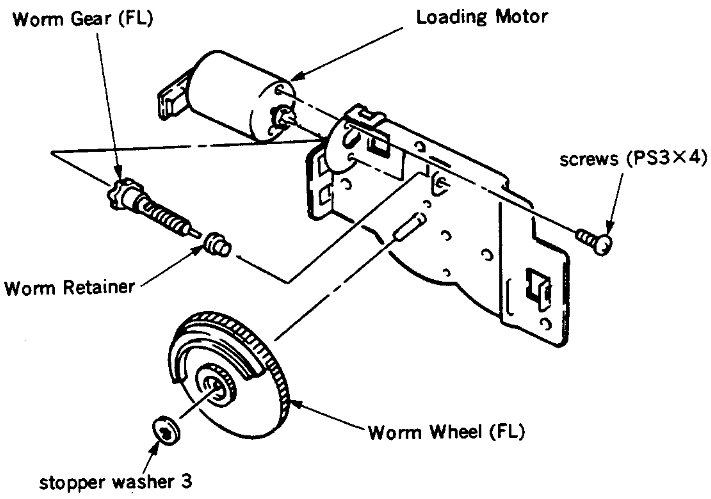

Worm Gear (FL)
Loading Motor
screws (PS3×4)
Worm Retainer
Worm Wheel (FL)
stopper washer 3

Fig. 2

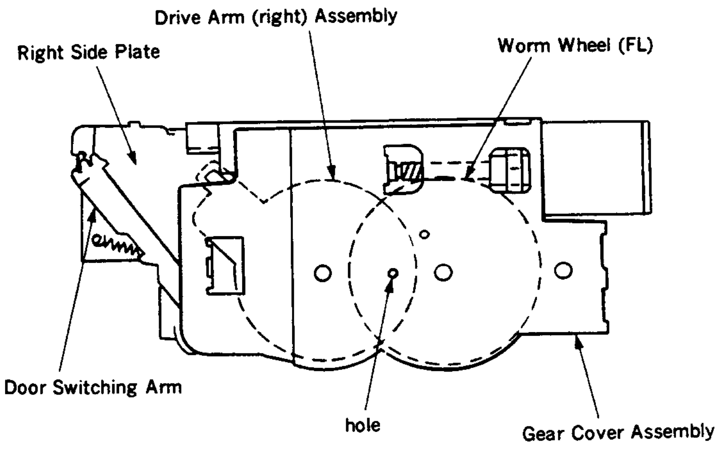
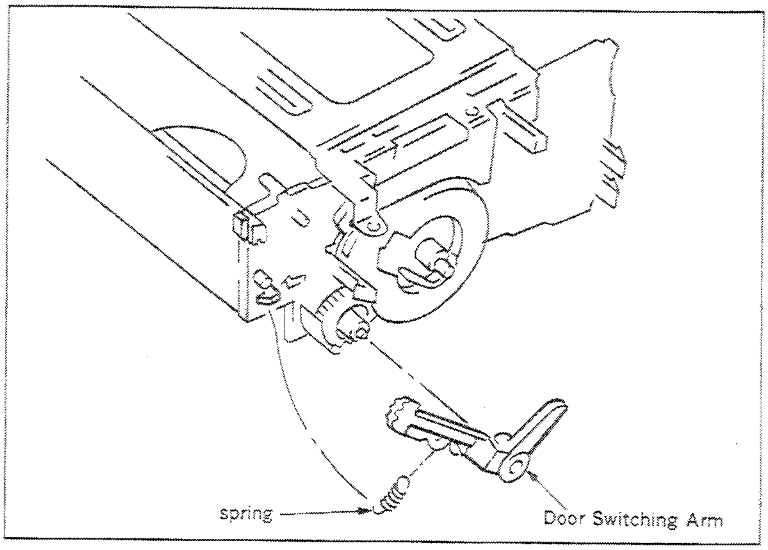

Drive Arm (right) Assembly
Right Side Plate
Worm Wheel (FL)
Door Switching Arm
hole
Gear Cover Assembly

Fig. 3

4-2-3. Door Switching Arm Replacement

(1) Remove the spring.
(2) Pull out the door switching arm.


spring
Door Switching Arm

4-3. BC ROLLER ASS'Y REPLACEMENT

(1) Remove the spring from the notch in the ACE head base.
(2) Remove the stop washer (4 mm dia.), then remove the BC roller ass'y. (Fig. 1)

Precautions for installation

①Ensure that the opening of the hook is uppermost. (Fig. 2)
②Take care not to scratch the drum.
③Install the BC roller ass'y in such a way that the extremity enters the part of the shuttle holder indicated by the arrow in Fig. 2.

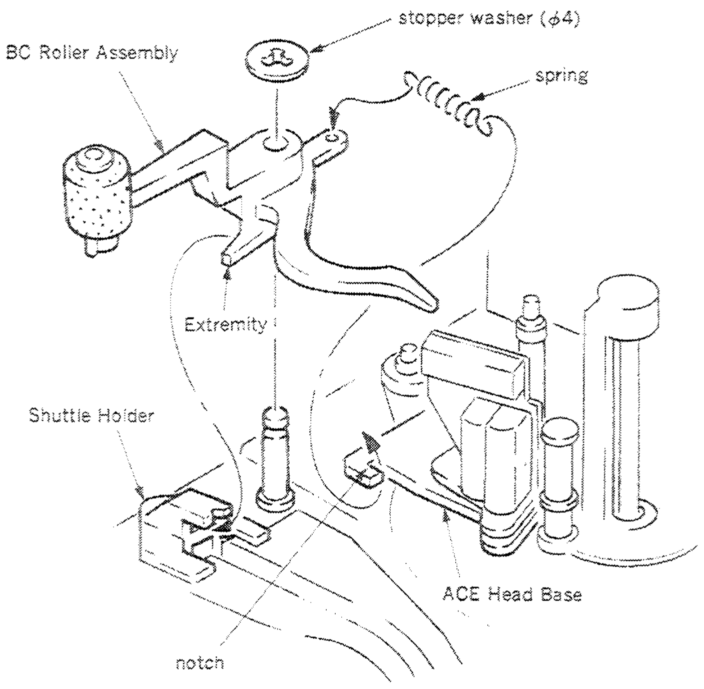

stopper washer (ϕ4)
BC Roller Assembly
spring
Extremity
Shuttle Holder
ACE Head Base
notch

Fig. 1

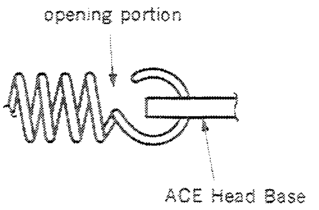

opening portion
ACE Head Base

Fig. 2

4-4. UPPER DRUM ASS'Y REPLACEMENT

Tools :

Alignment tape (KRV-45HPS)
Alignment tape (KRV-4821PSA)
Alignment tape (JVC-MH-2)
X value adjustment tool (J-6380-710-A)
RP extension tool (J-6381-370-A)
Box screwdriver (width 5.5 mm)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Oscilloscope
Connecting cable (See sub-section 6-9.)
S-VHS cassette tape (T-160 and T-120)

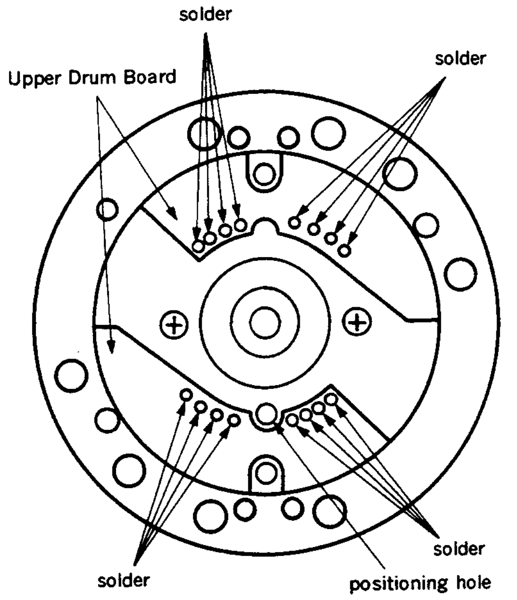
(1) Remove the screw, then remove the shaft ground ass'y.
(2) Unsolder sixteen points on the upper drum board shown in Fig. 1.
(3) Remove two screws, then remove the upper drum ass'y.

Precautions for installation

①Do not touch the head tip and the contact of the shaft ground ass'y with the fingers or a tool.
②Clean the surface of the drum shaft that touches the contact of the shaft ground ass'y, using cleaning fluid.
③Install the contact of the shaft ground ass'y at roughly the center of the drum shaft.
④Align the locating hole of the upper drum ass'y with this of the lower drum ass'y, then install the upper drum ass'y.
⑤The tightening torque for installing the upper drum ass'y must be 590×10^{-3} N·m (6 kg·cm).

[Adjustment after replacing the upper drum ass'y]

- See next page.


solder
Upper Drum Board
solder
solder
solder
positioning hole

Upper Drum Assembly (Top View)

Fig. 1

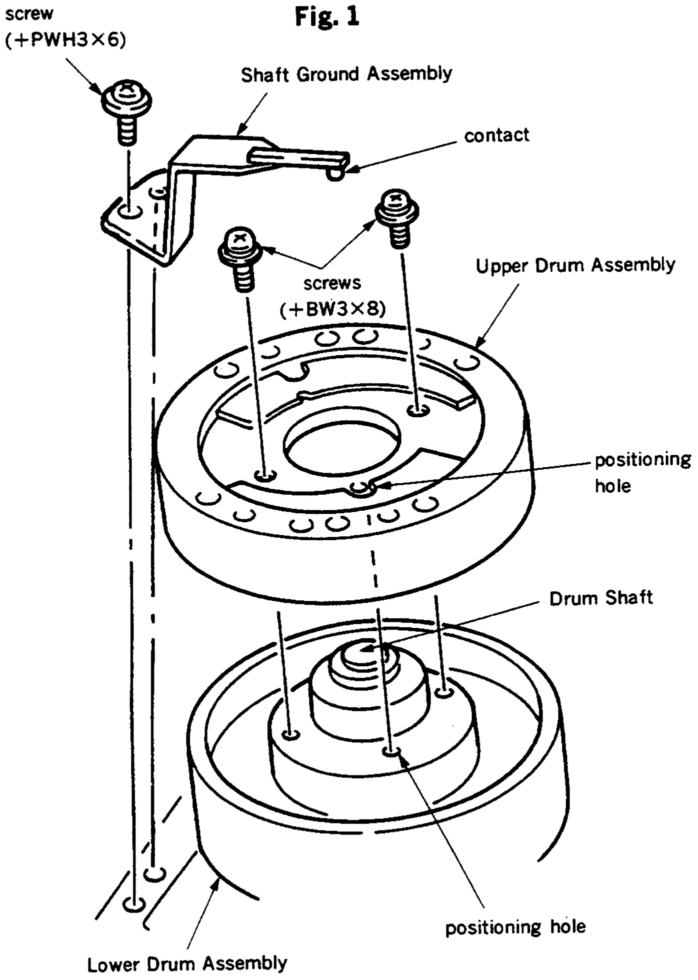
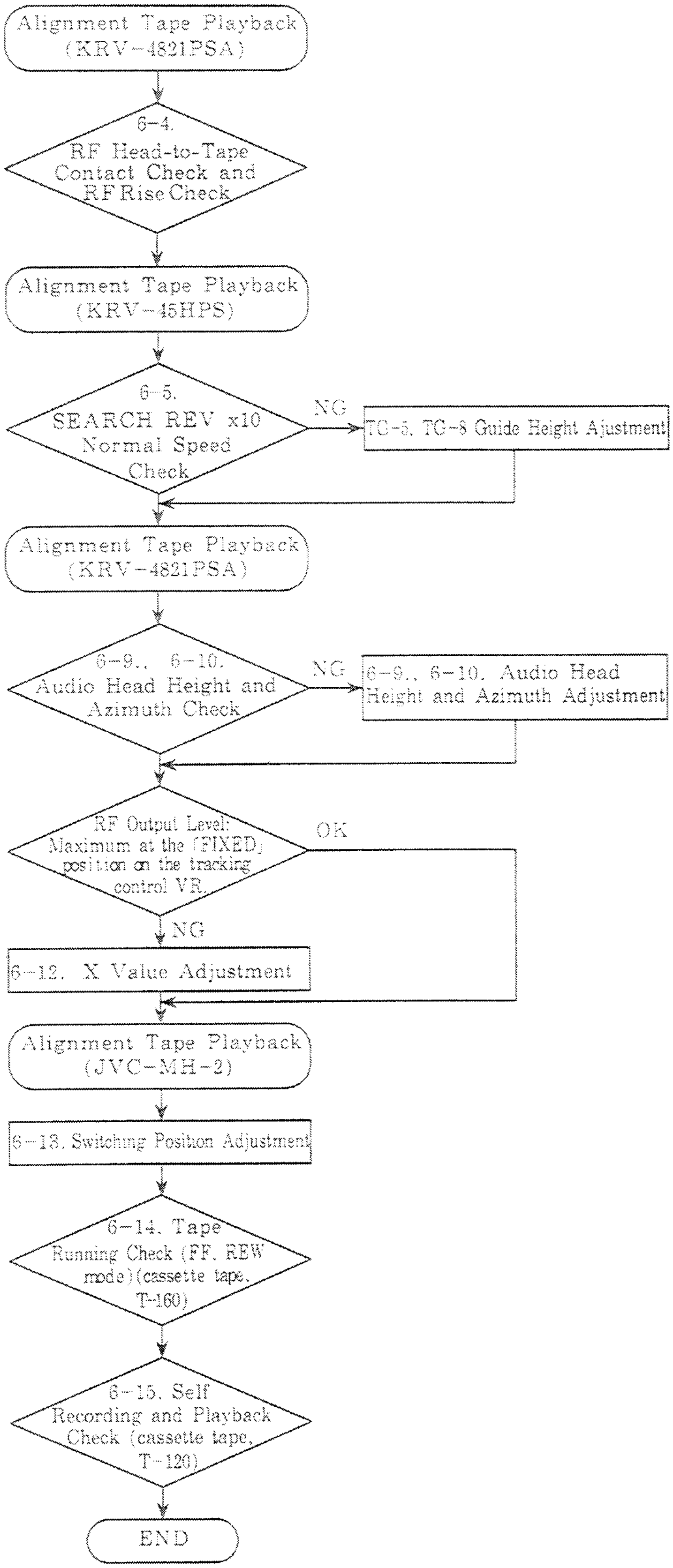

screw
(+PWH3×6)
Shaft Ground Assembly
contact
screws
(+BW3×8)
Upper Drum Assembly
positioning
hole
Drum Shaft
positioning hole
Lower Drum Assembly

Fig. 2

[Adjustment after replacing the upper drum ass'y]

- Refer to Section 6, perform the Tape Run Alignments.


Alignment Tape Playback (KRV-4821PSA)
6-4. RF Head-to-Tape Contact Check and RF Rise Check
Alignment Tape Playback (KRV-45HPS)
6-5. SEARCH REV x10 Normal Speed Check
NG
TG-5, TG-8 Guide Height Ajustment
Alignment Tape Playback (KRV-4821PSA)
6-9., 6-10. Audio Head Height and Azimuth Check
NG
6-9., 6-10. Audio Head Height and Azimuth Adjustment
RF Output Level: Maximum at the [FIXED] position on the tracking control VR.
OK
NG
6-12. X Value Adjustment
Alignment Tape Playback (JVC-MH-2)
6-13. Switching Position Adjustment
6-14. Tape Running Check (FF, REW mode)(cassette tape, T-160)
6-15. Self Recording and Playback Check (cassette tape, T-120)
END

4-5. DRUM ASS'Y REPLACEMENT

Tools :

Alignment tape (KRV-45HPS)
Alignment tape (KRV-4821PSA)
Alignment tape (JVC-MH-2)
X value adjustment tool (J-6380-710-A)
RP extension tool (J-6381-370-A)
Box screwdriver (width 5.5 mm)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Oscilloscope
Connecting cable (See sub-section 6-9.)
S-VHS cassette tapes (T-160 and T-120)

(1) Remove the drum harness from the RP board. (Fig. 1)
(2) Remove the screw, then remove the shaft ground ass'y. (Fig. 2)
(3) Disconnect connector CN604 from the drum ass'y. (Fig. 2)
(4) Remove three screws, then remove the drum ass'y. (Fig. 2)

Precautions for installation

①Do not touch the head tip and the contact of the shaft ground ass'y with the fingers or a tool.

②Clean the following parts with cleaning fluid.

- The surface of the drum shaft that touches the ground contact of shaft ground assembly.
- The mounting faces of the drum ass'y and the chassis.
- The surface of the drum ass'y over which the tape travels

③Align the holes (two) in the drum ass'y with the pins (two) on the chassis, then install the drum ass'y.

④The tightening torque of the mounting screws of the drum ass'y must be 392×10^{-3} to 490×10^{-3} N•m (4 to 5 kg•cm).

⑤Connect the drum harness to CN801 of the RP board while being careful of the direction of the conductor side.

[Adjustment after Replacing the Drum Ass'y]
See sub-section 4-4. [Same as the method of performing adjustment after replacing the upper drum ass'y]

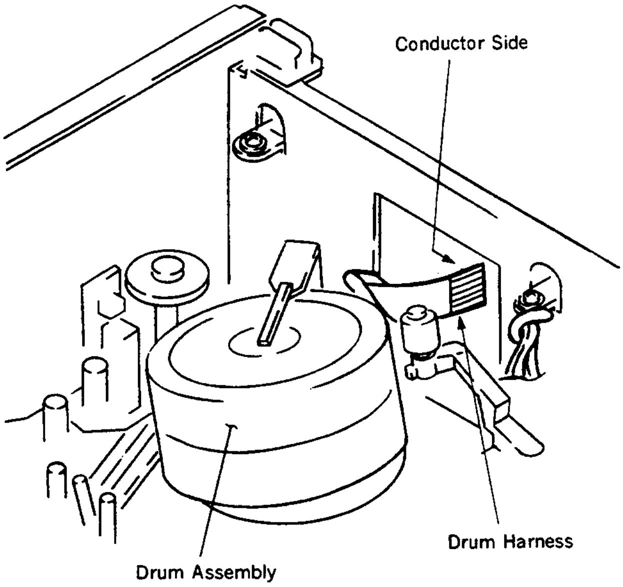


Fig. 1

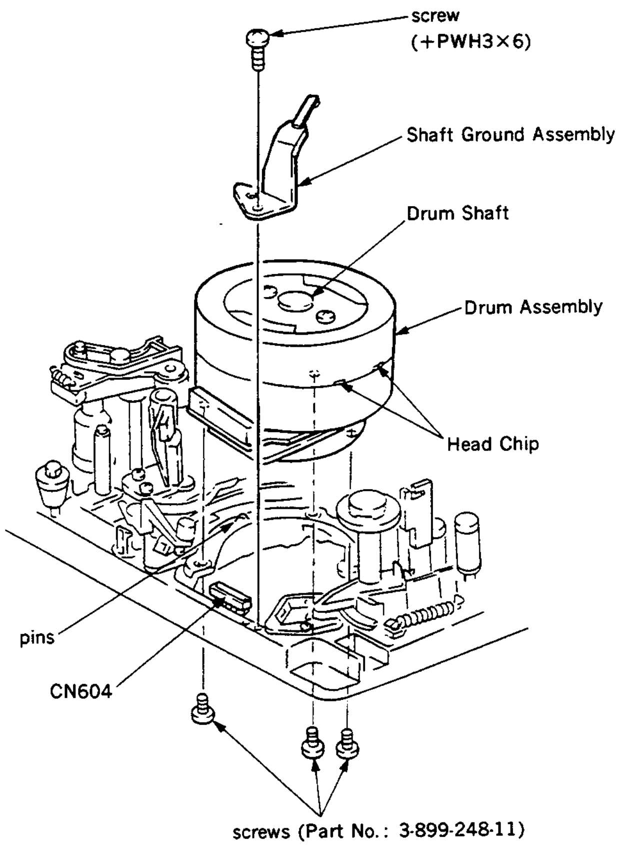


Fig. 2

4-6. TG-1 GUIDE REPLACEMENT

Tools:
Reference plate (J-6380-080-A)
Master block (J-6380-700-A)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Hex wrench screwdriver (width 0.89 mm)
Remote controller (SVRM-100, RM-V100, or RM-V200)

(1) Remove the cassette compartment according to sub-section 4-2.
(2) Loosen the set screw by inserting the hex wrench into the hole in the chassis (left). (Fig. 1)
(3) Rotate the TG-1 guide counterclockwise with the guide adjustment screwdriver, and remove it. (Fig. 1)

[Installation and height adjustment]
(1) Press the PLAY button on the remote controller for the threading completion mode. (See sub-section 4-1-3.)
(2) Clean the mounting face of the reference plate and the four mounting points on the chassis with cleaning fluid.
(3) Install the reference plate on the chassis. (Fig. 3) (If the reference plate moves about when the top of the plate is touched gently with the fingers at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)
(4) Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.
(5) Set the master block with the stamped L1 face upward, then place it against the TG-1 guide from the direction shown in the drawing, and tighten the set screw until the lower flange is roughly the same height as the go-end of the master block. (Figs. 2 and 3)
(Set screw tightening torque: 78×10^{-3} to 98×10^{-3} N•m (0.8 to 1 kg•cm))
(6) Turn the flange of the guide with the guide adjustment screwdriver until the required specification is satisfied. (Fig. 3)
(7) Perform tape run alignments of section 6.

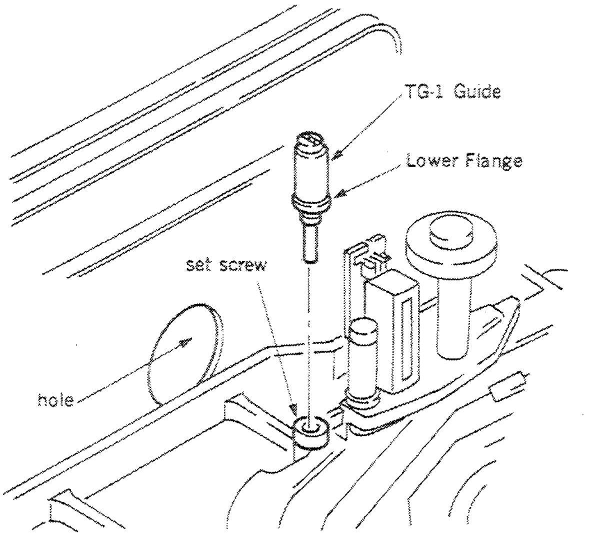

TG-1 Guide
Lower Flange
set screw
hole

Fig. 1

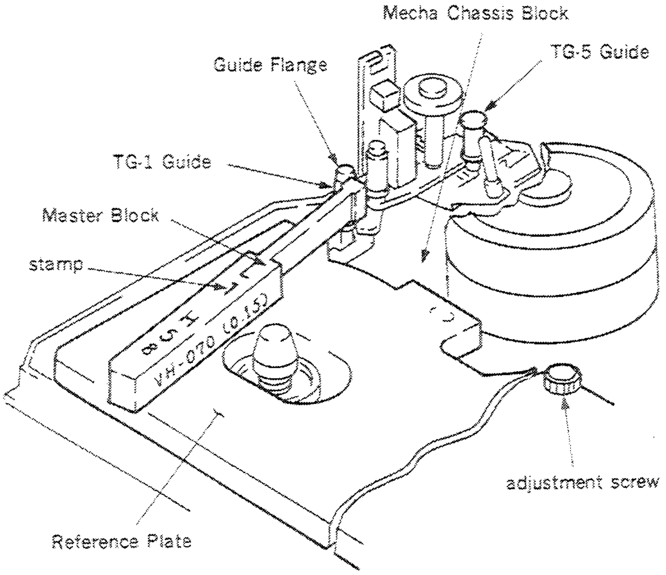

Mecha Chassis Block
Guide Flange
TG-5 Guide
TG-1 Guide
Master Block
stamp
VH-070 (0.15)
adjustment screw
Reference Plate

Fig. 2

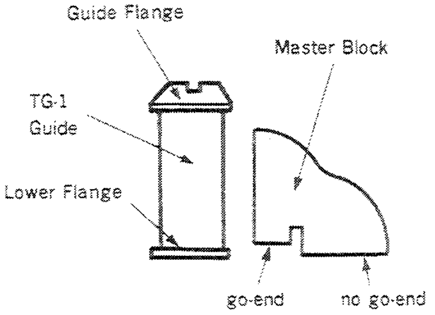

Guide Flange
Master Block
TG-1 Guide
Lower Flange
go-end
no go-end

Fig. 3

Spec.:
The height of the lower flange must pass at the go-end of the master block and stop at the no go-end.

4-7. TENSION REGULATOR ASS'Y (TG-2 GUIDE) AND STD ASS'Y REPLACEMENT

Tools :
Oscilloscope
Tentelometer (T2-H7-UMC)
Digital voltmeter
S-VHS cassette tape (T-120)
Sony oil (7-661-018-18)
Locking compound

(1) Remove the cassette compartment according to sub-section 4-2.
(2) Disconnect connector CN657Y from the HN board.
(3) Remove the spring from the STD ass'y.
(4) Remove the stop washer 2.3 and also the screw.
(5) Remove the tension regulator ass'y and STD ass'y together.
(Take care not to lose the poly-slider-washer.)

Precautions for installation

①Clean the shaft with cleaning fluid, and apply 1/2 a drop of Sony oil. (Fig. 1)
②Insert the slit arm of the tension regulator ass'y into the slit in the STD ass'y, then install the resulting ass'y on the shaft. (Fig. 1)
③Align the U groove and longitudinal hole of the STD ass'y with bosses **a** on the chassis (Fig. 1), then install the STD ass'y in such a way that the adjustment groove comes to a point mid-way between bosses **b**. (Fig. 2)

[Adjustment after replacement]

Mechanical adjustment of position of tension regulator ass'y

(1) Connect the oscilloscope as follows.
CH-1 (DC range) : TP301/SS board (D-9)
(2) Turn ON No. 8 switch of DIP switch S101/SS board (H-9). (Fig. 3)
(3) Keep the cassette down switch pressed down with finger. (Fig. 3)
(4) Turn ON the POWER switch.
(5) Press the PLAY button of the unit for the threading completion mode (rotate the drum).
(6) Remove a finger from the cassette down switch.

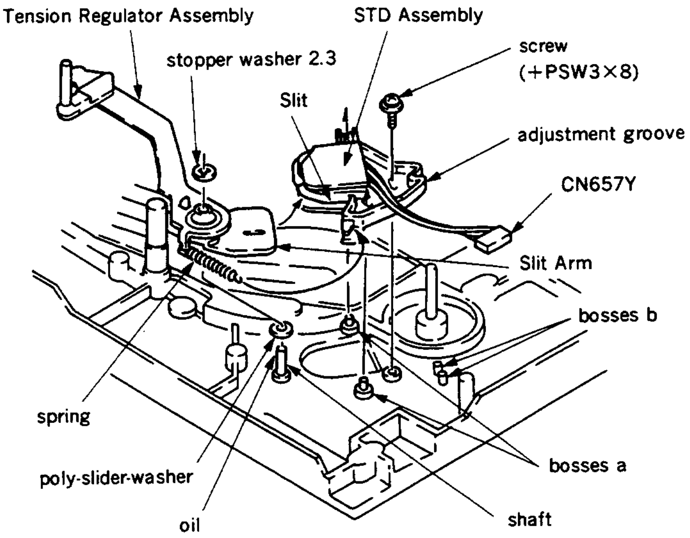

Tension Regulator Assembly
STD Assembly
stopper washer 2.3
screw
(+PSW3×8)
Slit
adjustment groove
CN657Y
Slit Arm
bosses b
spring
poly-slider-washer
oil
bosses a
shaft

Fig. 1

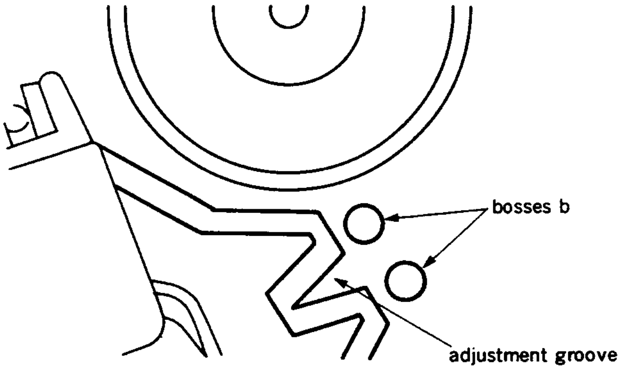

bosses b
adjustment groove

Fig. 2

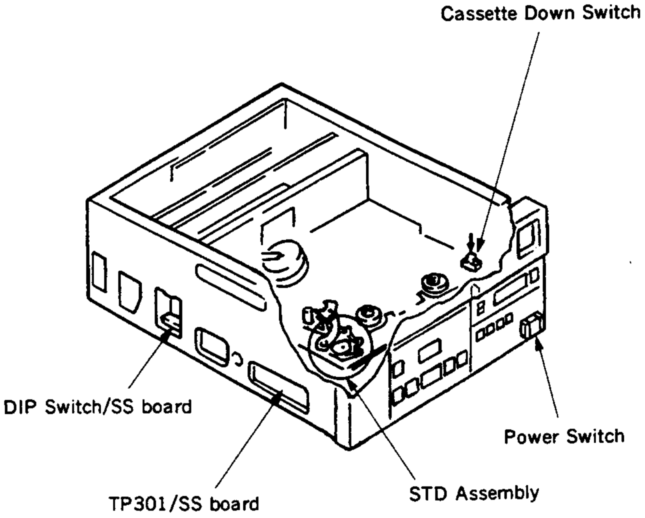

Cassette Down Switch
DIP Switch/SS board
Power Switch
TP301/SS board
STD Assembly

Fig. 3

(7) Loosen the screw of the STD ass'y by about 90°.

(8) Insert a screwdriver into the position shown in Fig. 4, then move the STD ass'y in the direction of arrows A and B, and set it to the position where the DC voltage of TP301 is minimum.

(9) Move the STD ass'y slightly in the direction of arrow C, and tighten the screw until the DC voltage of TP301 is within the specification range. (Fig. 4)

(10) Confirm that when the tension regulator ass'y is moved in the direction of the arrow D, the DC voltage of TP301 increases in direct proportion. (Fig. 5)

(11) Press the STOP button of the unit for the un-threading completion mode.

(12) Turn OFF No. 8 switch of the DIP switch.

(13) Smear the screw of the STD ass'y with locking compound. (Fig. 4)

Tape tension adjustment

(14) Perform tape tension adjustment according to sub-section 6-2.

Tape run adjustment

(15) Perform tape run alignments of section 6.

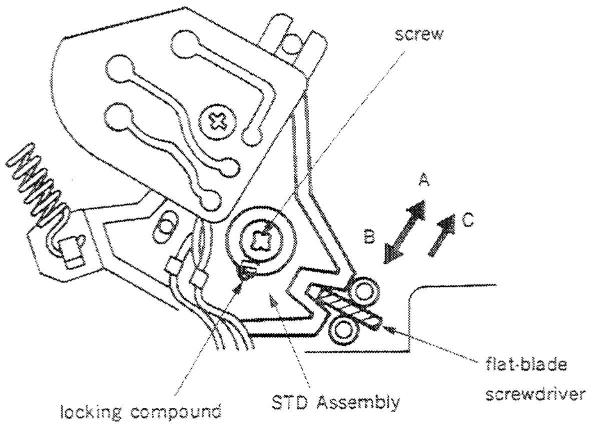
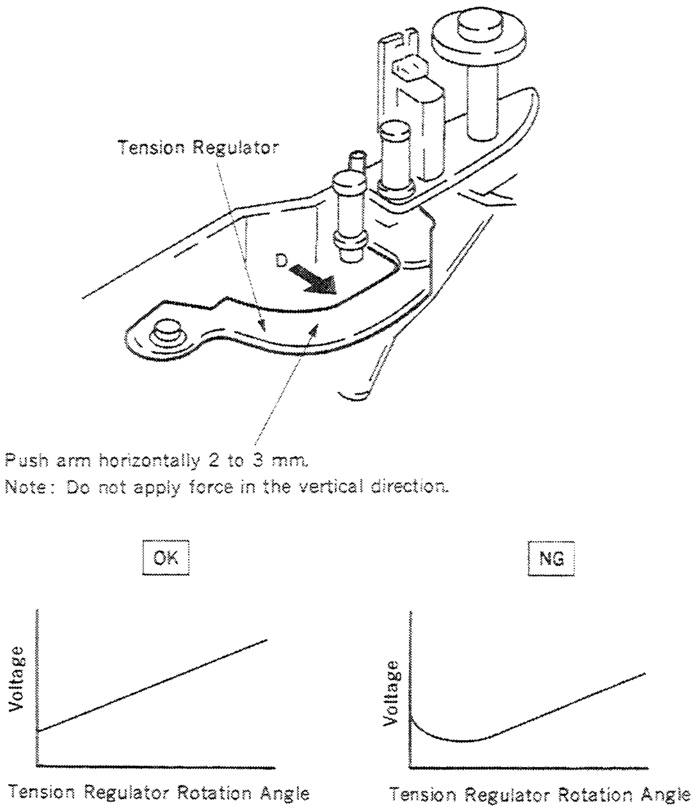

screw
A
B
C
flat-blade screwdriver
locking compound
STD Assembly

Fig. 4

Spec. :
DC voltage of TP301
min. to min.+0.2 V


Tension Regulator
D
OK
NG
Voltage
Tension Regulator Rotation Angle
Voltage
Tension Regulator Rotation Angle

Push arm horizontally 2 to 3 mm.
Note: Do not apply force in the vertical direction.

Fig. 5

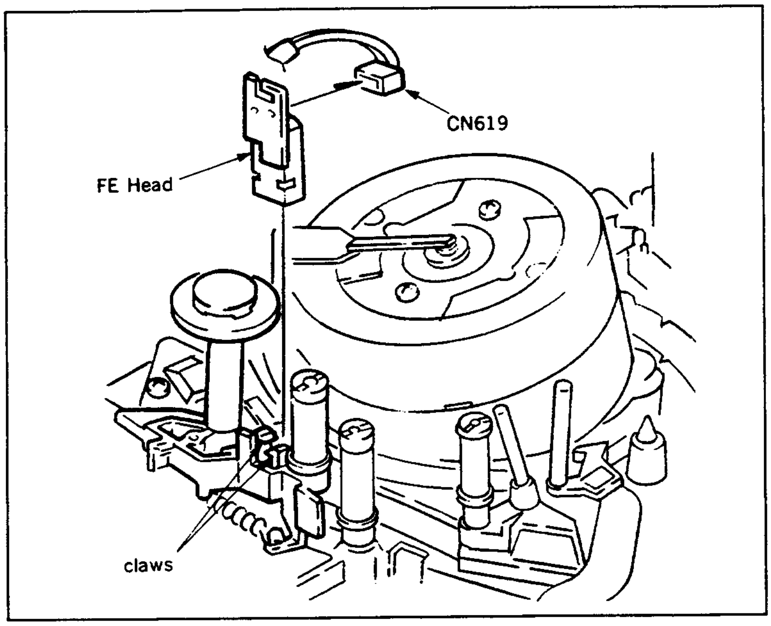
4-8. FE HEAD REPLACEMENT

(1) Disconnect connector CN619 from the head board.

(2) Remove two claws, then remove the FE head.

Precaution for installation

①Push in the FE head until the two claws lock into place.


CN619
FE Head
claws

4-9. TAPE STABILIZER ASS'Y (TG-4 GUIDE) AND TG-3 GUIDE REPLACEMENT

Tools :

Reference plate (J-6380-080-A)

Master block (J-6380-700-A)

Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)

Remote controller (SVRM-100, RM-V100, or RM-V200)

Sony oil (7-661-018-18)

(1) Remove the cassette compartment according to sub-section 4-2.

(2) Remove the FE head according to sub-section 4-8.

(3) Remove the tension coil spring.

(4) Remove the stop washer 1.5, then remove the compression coil spring.

(5) Remove the tape stabilizer ass'y from the chassis.

Tape stabilizer (TG-4 guide)

(6) Remove three claws, then remove the TS shaft retainer.

(7) Remove the stop ring, then remove the tape stabilizer.

TG-3 guide

(8) Turn the TG-3 guide counterclockwise with a guide adjustment screwdriver, and remove it.

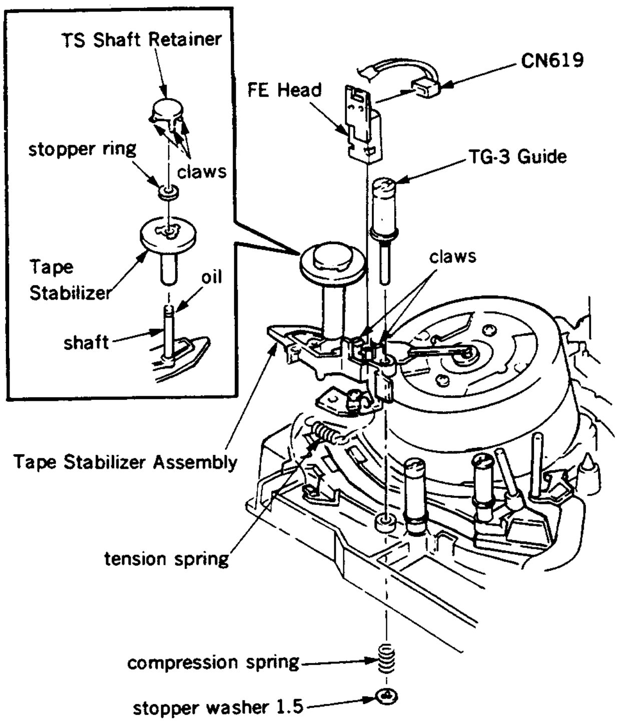

TS Shaft Retainer
stopper ring
claws
Tape Stabilizer
oil
shaft
FE Head
CN619
TG-3 Guide
claws
Tape Stabilizer Assembly
tension spring
compression spring
stopper washer 1.5

Fig. 1

Precautions for installation

①Clean the mounting shaft of the tape stabilizer with cleaning fluid, then apply 1/3 of a drop of Sony oil.

②Install the TG-3 guide to the height shown in Fig. 2.

[Adjustment after replacement]

TG-3 guide height adjustment

(1) Press the PLAY button on the remote controller for the threading completion mode. (See sub-section 4-1-3.)

(2) Clean the mounting face of the reference plate and the four mounting points on the chassis with cleaning fluid.

(3) Install the reference plate on the chassis. (Fig. 3) (If the reference plate moves about when the top of the plate is touched gently with the fingers at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)

(4) Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.

(5) Set the master block with the stamped L3 face upward, then place it against the TG-3 guide from the direction shown in the drawing, and confirm that the height of the lower flange satisfies the specification. (Figs. 3 and 4)

If the specification is not satisfied

(6) Turn the flange of the TG-3 guide with the guide adjustment screwdriver.

(7) Perform tape run alignments of section 6.

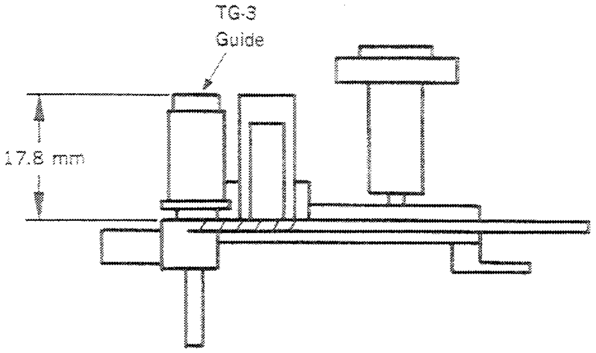

TG-3
Guide
17.8 mm

Fig. 2

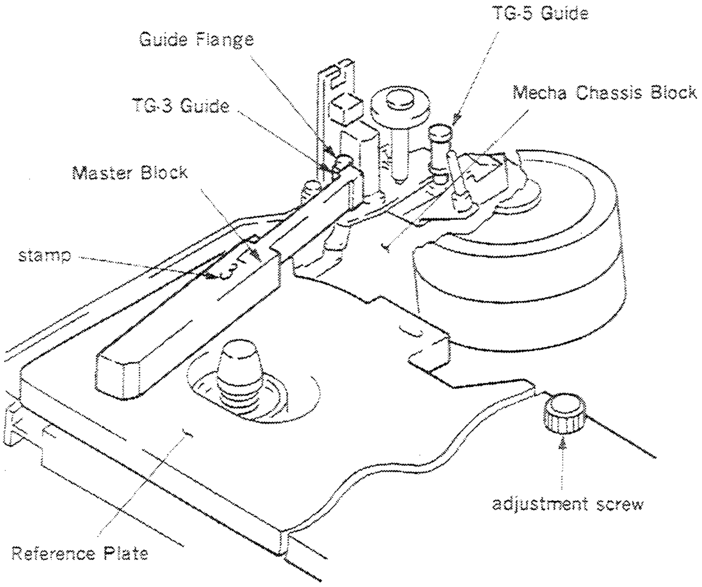

TG-5 Guide
Guide Flange
TG-3 Guide
Mecha Chassis Block
Master Block
stamp
adjustment screw
Reference Plate

Fig. 3

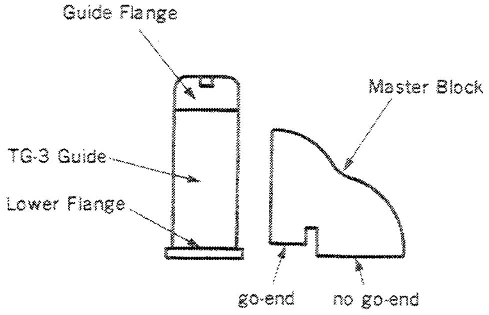

Guide Flange
Master Block
TG-3 Guide
Lower Flange
go-end
no go-end

Fig. 4

Spec. :
The height of the lower flange must pass at the go-end of the master block and stop at the no go-end.

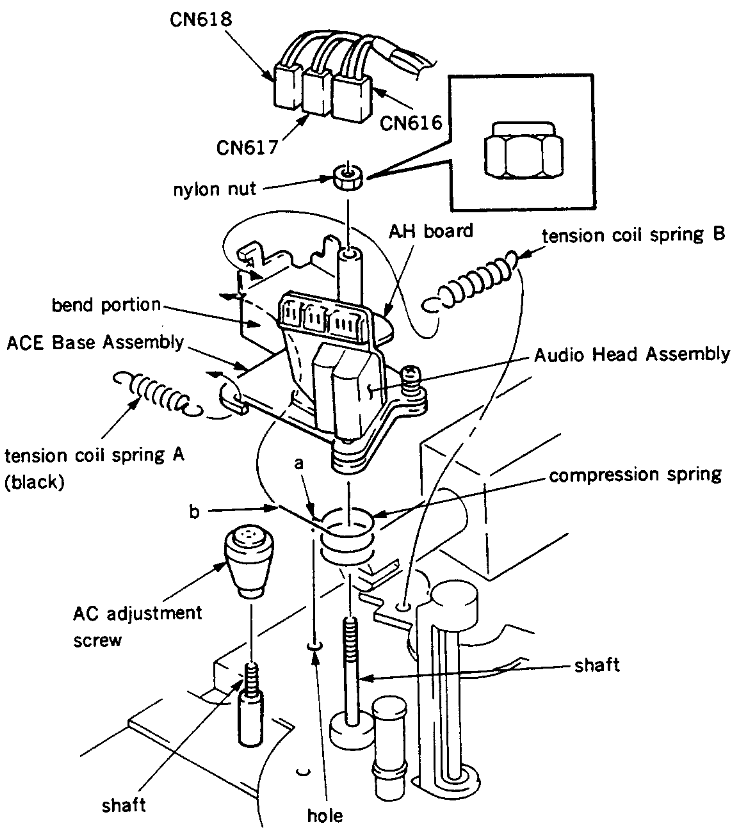
4-10. AUDIO HEAD ASS'Y REPLACEMENT

Tools :
Reference plate (J-6380-080-A)
Master block (J-6380-700-A)
Box screwdriver (width 5.5 mm)
Thickness gauge (9-911-053-00)
Remote controller (SVRM-100, RM-V100, or RM-V200)
MOLYKOTE grease EM-30LG (J-6090-014-A)
or MOLYKOTE grease EM-30L : DOW CORNING Corp.

(1) Remove the cassette compartment according to sub-section 4-2.
(2) Disconnect connectors CN616, 617 and 618 from the AH board.
(3) Remove the tension coil spring A and B.
(4) Remove the AC adjustment screw.
(5) Remove the adjustment nut, then pull out the audio head ass'y.

Precautions for installing the audio head

①Insert part **a** of the torsion coil spring into the hole in the chassis, then insert part **b** into the bend in the ACE base ass'y. (Fig. 1)
②Smear grease onto the bend that the ACE base ass'y touch the AC adjustment screw. (Fig. 1)
③Install the audio head ass'y and the AC adjustment screw to the height shown in Fig. 3.



CN618
CN617
CN616
nylon nut
AH board
tension coil spring B
bend portion
ACE Base Assembly
Audio Head Assembly
tension coil spring A
(black)
a
compression spring
b
AC adjustment
screw
shaft
shaft
hole

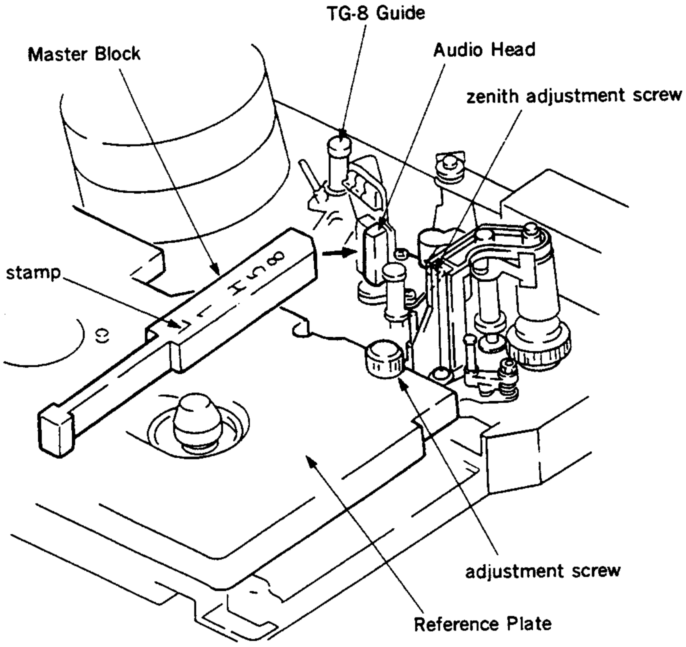
Fig. 1

[Adjustment after replacement]

Audio head zenith adjustment

(1) Push the PLAY button of the remote controller for the threading completion mode. (See sub-section 4-1-3.)
(2) Clean the mounting face of the reference plate and the four mounting points on the chassis with cleaning fluid.
(3) Install the reference plate on the chassis. (Fig. 2) (If the reference plate moves about when the top of the plate is touched gently with the fingers at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)
(4) Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.
(5) Set the master block with the stamped L1 face upward, then place it gently against the audio head from the direction shown in the drawing (Fig. 2).

Caution : Take care not to damage the surface of the audio head.



TG-8 Guide
Master Block
Audio Head
zenith adjustment screw
stamp
adjustment screw
Reference Plate

Fig. 2

(6) Tilt the head with the zenith adjustment screw until gap A satisfies the specification. (Fig. 4)

Audio head azimuth adjustment

(7) Change the orientation of the master block and place it against the side of the audio head from the direction shown in the drawing. (Fig. 5)

(8) Turn the azimuth adjustment screw so that gaps B and C satisfy the specification. (Fig. 6)

(9) Confirm that the zenith specification is satisfied.

If the specification is not satisfied

(10) Repeat the zenith and azimuth adjustments until the relevant specifications are satisfied.

Tape run adjustment

(11) Perform tape run alignments of section 6.
- Upon completion of adjustment, smear locking compound onto the AC adjustment screw, zenith adjustment screw and the azimuth adjustment screw. (Fig. 7)

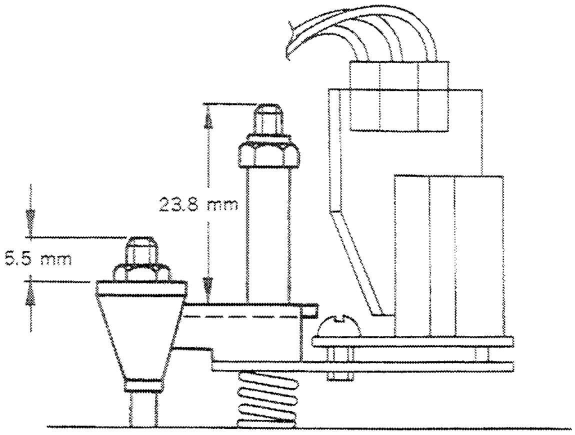


Fig. 3

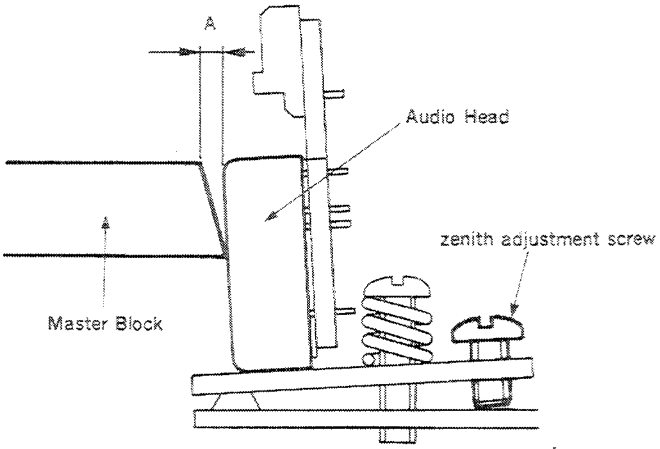

A
Audio Head
zenith adjustment screw
Master Block

Fig. 4

Spec. :
gap A=0 to 0.05 mm

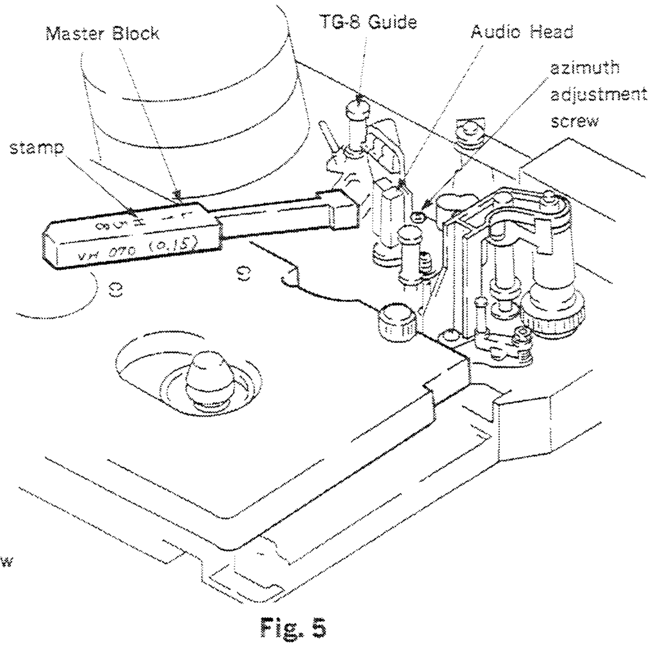

Master Block
TG-8 Guide
Audio Head
azimuth adjustment screw
stamp
VH 070 (0.15)

Fig. 5

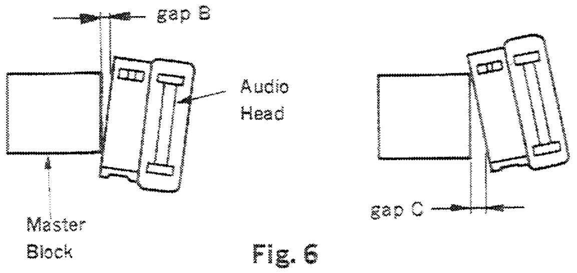

gap B
Audio Head
Master Block
gap C

Fig. 6

Spec. :
gap B, C=0 to 0.05 mm

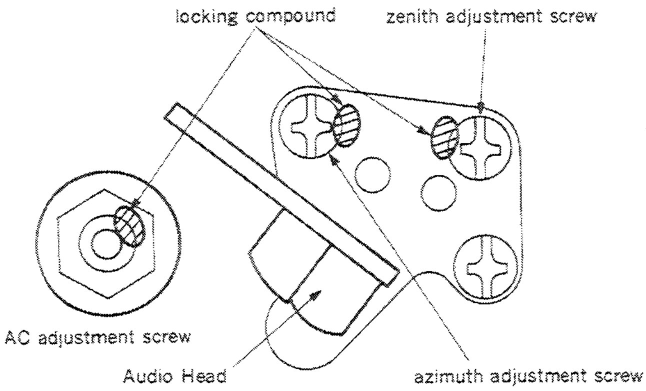

locking compound
zenith adjustment screw
AC adjustment screw
Audio Head
azimuth adjustment screw

Fig. 7

4-11. TG-9 GUIDE REPLACEMENT

Tools :

Reference plate (J-6380-080-A)
Master block (J-6380-700-A)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Hex wrench screwdriver (width 0.89 mm)
Remote controller (SVRM-100, RM-V100, or RM-V200)

(1) Remove the cassette compartment according to sub-section 4-2.
(2) Loosen the set screw by the hex wrench. (Fig. 1)
(3) Rotate the TG-9 guide counterclockwise with the guide adjustment screwdriver, and remove it. (Fig. 1)

[Installation and height adjustment]

(1) Press the PLAY button on the remote controller for the threading completion mode. (See sub-section 4-1-3.)
(2) Clean the mounting face of the reference plate and the four mounting points on the chassis with cleaning fluid.
(3) Install the reference plate on the chassis. (Fig. 3) (If the reference plate moves about when the top of the plate is touched gently with the fingers at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)
(4) Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.
(5) Set the master block with the stamped L1 face upward, then place it against the TG-9 guide from the direction shown in the drawing, and tighten the set screw until the lower flange is roughly the same height as the go-end of the master block. (Figs. 2 and 3)
(Set screw tightening torque: 78×10^{-3} to 98×10^{-3} N•m (0.8 to 1 kg•cm))
(6) Turn the flange of the guide with the guide adjustment screwdriver until the required specification is satisfied. (Fig. 3)
(7) Perform tape run alignments of section 6.

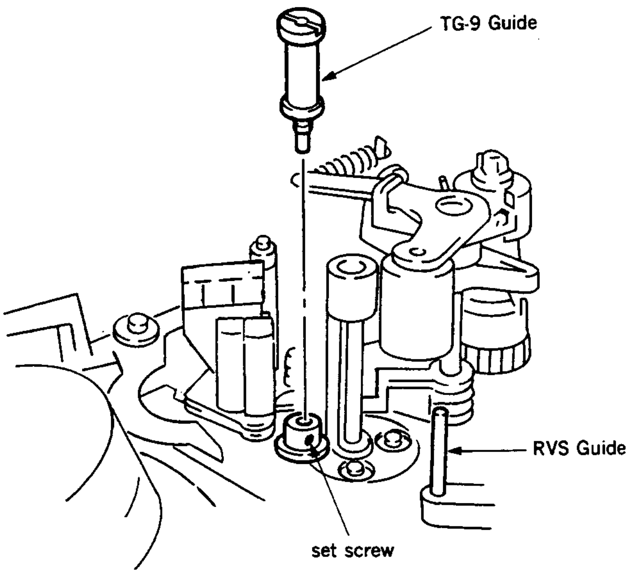

TG-9 Guide
RVS Guide
set screw

Fig. 1

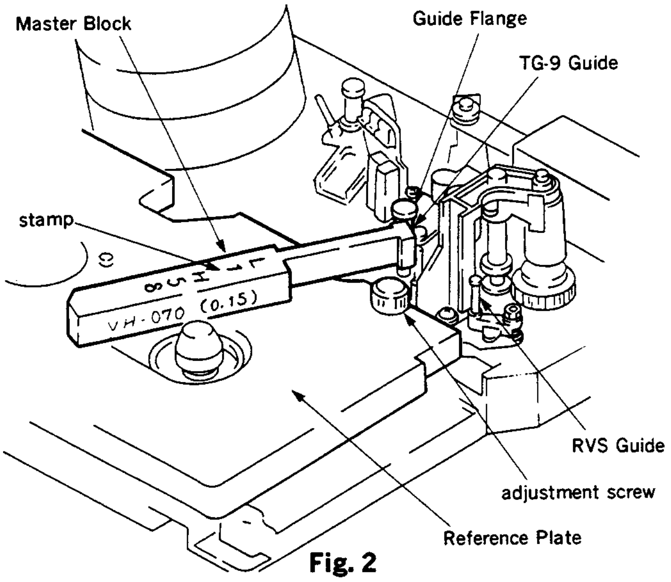

Master Block
Guide Flange
TG-9 Guide
stamp
VH-070 (0.15)
RVS Guide
adjustment screw
Reference Plate

Fig. 2

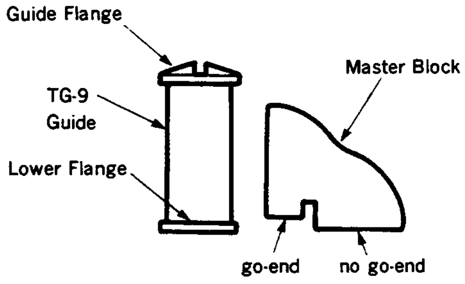

Guide Flange
Master Block
TG-9 Guide
Lower Flange
go-end
no go-end

Fig. 3

Spec. :
The height of the lower flange must pass at the go-end of the master block and stop at the no go-end.

4-12. PINCH ROLLER BLOCK ASS'Y AND ELEVATOR CAM REPLACEMENT

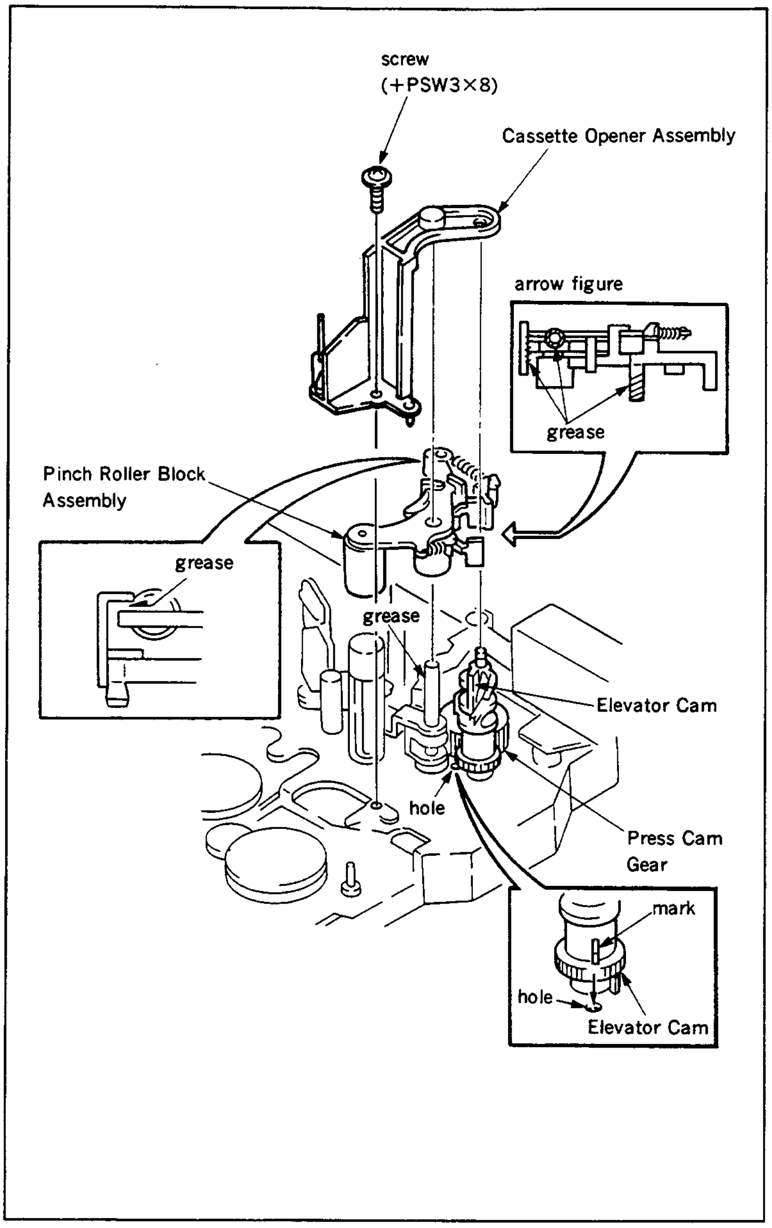
Tool:
MOLYKOTE grease EM-30LG (J-6090-014-A)
or MOLYKOTE grease EM-30L : DOW CORNING Corp.

(1) Remove the screw, then remove the cassette opener ass'y.
(2) Pull out the pinch roller block ass'y.
(3) Pull out the elevator cam.

Precautions for installation

①Align the mark on the elevator cam with the hole in the chassis, then engage the elevator cam with the press cam gear, and install it on the shaft. (As a result, the engagement phases of the elevator cam and press cam gear will coincide.)

②Smear the parts of the pinch roller block ass'y indicated by the arrows (five) with MOLYKOTE grease.


screw
(+PSW3×8)
Cassette Opener Assembly
arrow figure
grease
Pinch Roller Block Assembly
grease
grease
Elevator Cam
hole
Press Cam Gear
mark
hole
Elevator Cam

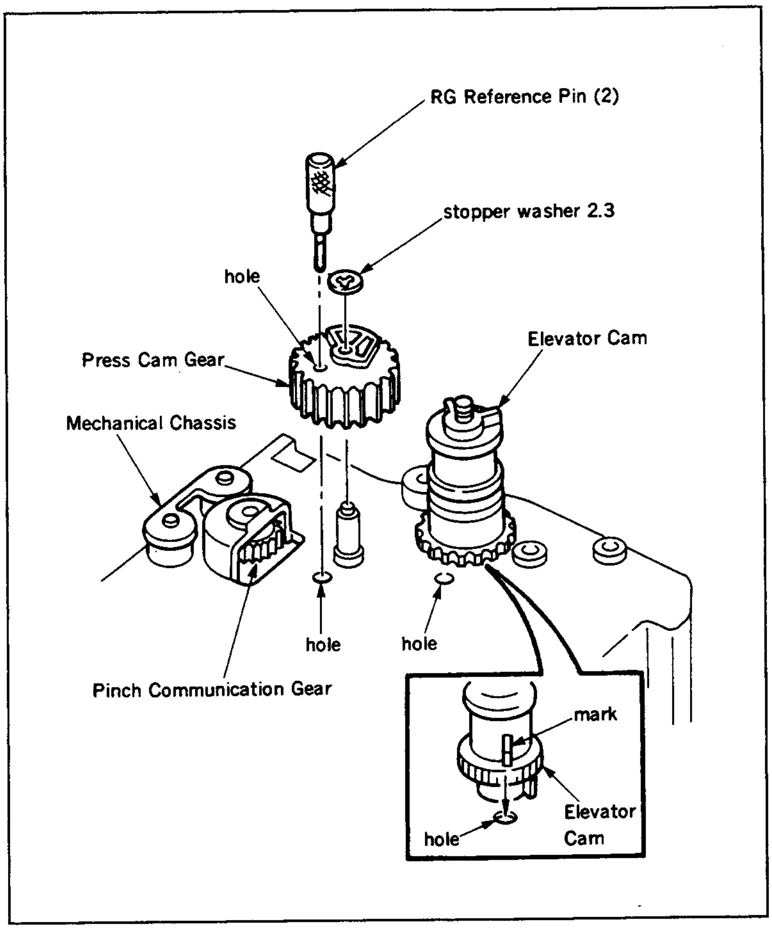
4-13. PRESS CAM GEAR REPLACEMENT

Tool :
RG reference pin (2) (J-6380-050-A)

(1) Remove the pinch roller block ass'y and Pinch solenoid ass'y according to sub-sections 4-12 and 4-31.
(2) Remove the stop washer 2.3, then remove the press cam gear.

Precautions for installation

①Pass RG reference pin (2) through the hole in the press cam gear. Next, align it with the hole in the chassis, then engage the press cam gear with the elevator cam and the pinch communication gear, and install it on the shaft.
(By aligning the pin with the holes in the gear, the meshing phases of the press cam gear, elevator cam and pinch communication gear will coincide.)
②The mark on the elevator cam shown in the figure must coincide with the hole in the chassis.


RG Reference Pin (2)
stopper washer 2.3
hole
Elevator Cam
Press Cam Gear
Mechanical Chassis
hole
hole
Pinch Communication Gear
mark
Elevator Cam
hole

4-14. RVS ARM ASS'Y (RVS GUIDE) AND RVS CAM GEAR REPLACEMENT

Tools :

RG reference pin (1) (J-6380-040-A)
Reference plate (J-6380-080-A)
Master block (J-6380-700-A)
Box screwdriver (width 5.5 mm)
Remote controller (SVRM-100, RM-V100, or RM-V200)
Sony oil (7-661-018-18)

(1) Remove the cassette compartment according to sub-section 4-2.
(2) Remove the E ring, then pull out the RVS arm ass'y. (Fig. 2)
(3) Remove the adjustment nut, then remove the guide base ass'y and the compression coil spring. (Fig. 1)
(4) Remove the stop washer 2.3, then pull out the RVS cam gear. (Fig. 2)

Precautions for installation

①Insert the projection on the guide base ass'y into the hole in the RVS arm, then install the guide base ass'y. (Fig. 1)

②Pass RG reference pin (1) through the hole in the RVS cam gear, then align it with hole B in the chassis, engage the RVS cam gear with the RVS relay gear, then install the gears on the shafts. (Fig. 2). Also, confirm that the hole in the press cam gear coincides with the hole in the chassis. (Refer to sub-section 4-13.)
(By aligning the pin with the holes in the gear, the meshing phases of the drive gears will coincide.)

③Clean the mounting shaft of the RVS arm ass'y with cleaning fluid, then apply 1/2 a drop of Sony oil. (Fig. 2)

④Insert part **a** of the torsion coil spring into hole A in the chassis, then insert part **b** into the bend in the RVS arm ass'y. (Fig. 2)

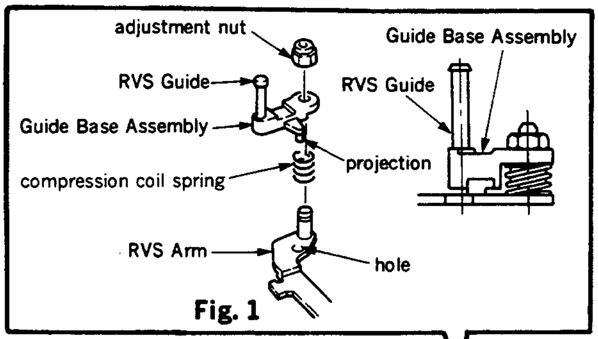

adjustment nut
Guide Base Assembly
RVS Guide
RVS Guide
Guide Base Assembly
projection
compression coil spring
RVS Arm
hole

Fig. 1

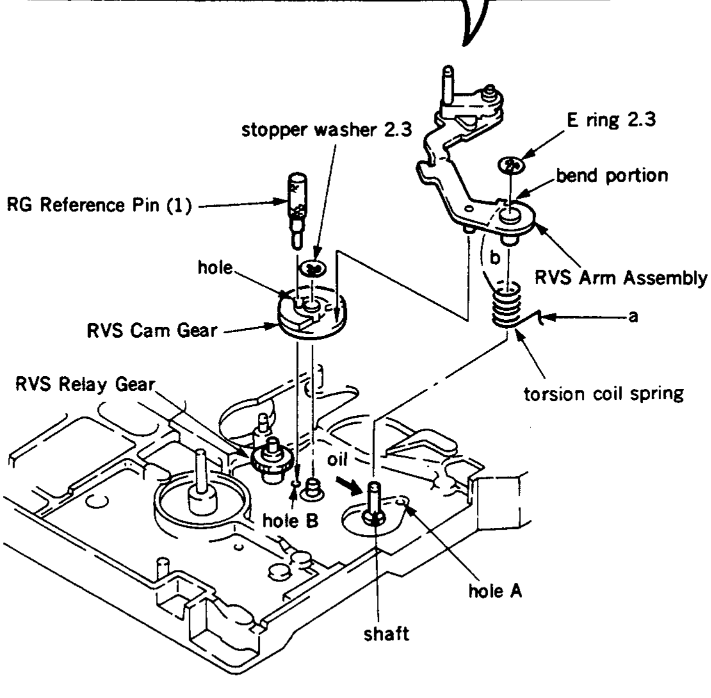

stopper washer 2.3
E ring 2.3
bend portion
RG Reference Pin (1)
hole
b
RVS Arm Assembly
a
RVS Cam Gear
torsion coil spring
RVS Relay Gear
oil
hole B
hole A
shaft

Fig. 2

[Adjustment after replacement]

RVS guide height adjustment

(1) Press the PLAY button on the remote controller for the threading completion mode. (See sub-section 4-1-3.)

(2) Clean the mounting face of the reference plate and the four mounting faces on the chassis with cleaning fluid.

(3) Install the reference plate on the chassis. (Fig. 3) (If the reference plate moves about when the top of the plate is touched gently with the fingers at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)

(4) Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.

(5) Set the master block with the stamped L1 face upward, then place it against the RVS guide from the direction shown in the figure. (Fig. 3)

(6) Using a box screwdriver, turn the adjustment nut until the specification is satisfied. (Fig. 4)

(7) Perform tape run adjustment of section 6.

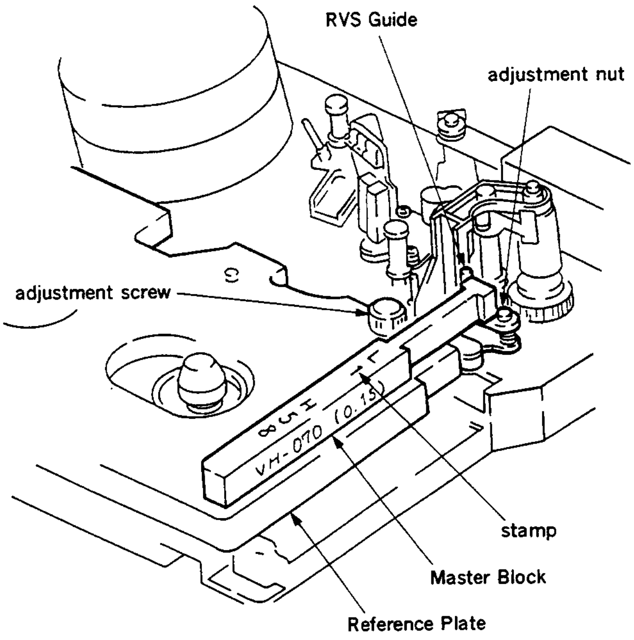

RVS Guide
adjustment nut
adjustment screw
VH-070 (0.15)
stamp
Master Block
Reference Plate

Fig. 3

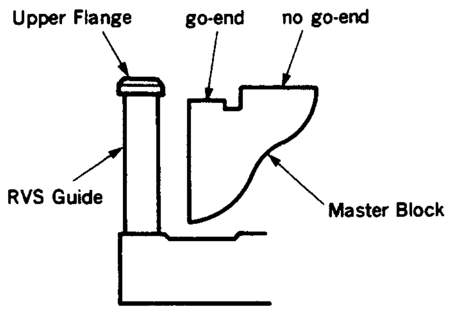

Upper Flange
go-end
no go-end
RVS Guide
Master Block

Fig. 4

Spec.:
The height of the upper flange must pass at the go-end of the master block and stop at the no go-end.

4-15. FR DRIVE GEAR AND RVS RELAY GEAR REPLACEMENT

Tools :

RG reference pin (1) (J-6380-040-A)
RG reference pin (2) (J-6380-050-A)

(1) Remove the cassette compartment according to sub-section 4-2.
(2) Remove the RVS arm ass'y and the RVS cam gear according to sub-section 4-14.
(3) Remove each of stop washer 2.3, then remove the FR drive gear and the RVS relay gear. (Fig. 1)

Precautions for installation

Gear installation sequence

①Install the RVS relay gear on the shaft, taking care that it is facing the right direction. (Fig. 3)

②Pass RG reference pin (2) through the hole in the FR drive gear, then align it with the hole in the mode gear (2), engage the FR drive gear with the RVS relay gear, and install it on the shaft. (Fig. 1)

③Using RG reference pin (1), engage the RVS cam gear with the RVS relay gear, then install it on the shaft according to subsection 4-14. (Fig. 2) (By aligning the pin with the holes in the gears, the meshing phases of the drive gears will coincide.)

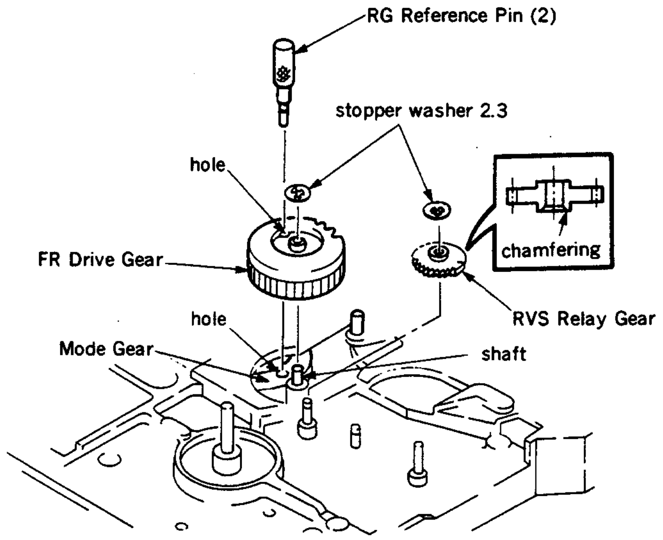

RG Reference Pin (2)
stopper washer 2.3
hole
chamfering
FR Drive Gear
hole
RVS Relay Gear
Mode Gear
shaft

Fig. 1

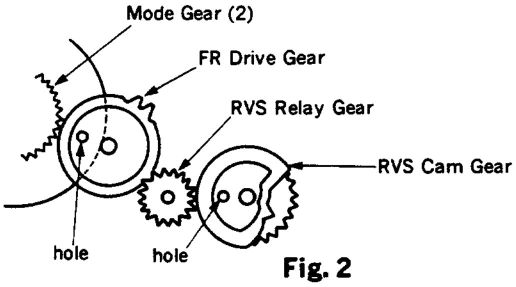

Mode Gear (2)
FR Drive Gear
RVS Relay Gear
RVS Cam Gear
hole
hole

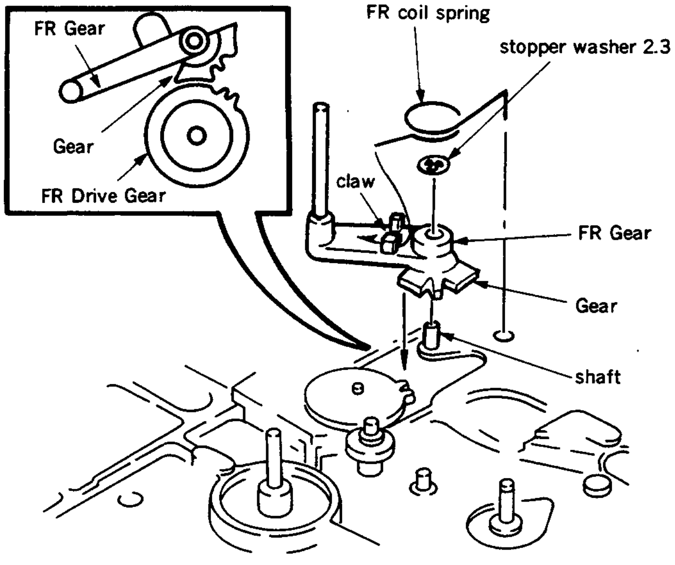
Fig. 2

4-16. FR GEAR REPLACEMENT

(1) Remove the FR coil spring.
(2) Remove stop washer 2.3, then pull out the FR gear.

Precautions for installation

①Align the gear part of the FR gear with the position shown in Fig. 2.


FR Gear
Gear
FR Drive Gear
FR coil spring
stopper washer 2.3
claw
FR Gear
Gear
shaft

4-17. REEL TABLE ASS'Y REPLACEMENT

Tools:

Reference plate (J-6380-080-A)
Reel table height adjustment tool (J-6380-090-A)
Hex wrench screwdriver (width 1.5 mm)

(1) Remove the cassette compartment according to sub-section 4-2.
(2) Remove the set screw with the hex wrench.
(3) Pull out the reel table ass'y from the reel shaft.

[Reel table height adjustment]

(1) Clean the mounting face of the reference plate and the four mounting faces on the chassis with cleaning fluid.
(2) Install the reference plate on the chassis. (Fig. 2) (If the reference plate moves about when the top of the plate is touched gently with the fingers at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)
(3) Clean the top of the reference plate and the adjustment face of the reel table height adjustment tool with cleaning fluid.
(4) Set the reel table height adjustment tool with the stamped side upward, then install it on the reference plate. (Fig. 2)
(5) Perform adjustment so that the height of the S side reel table (or T side reel table) satisfies the specification at position **a**, then rotate the table 90° in the direction of the arrow, and perform adjustment so that the height of the reel table satisfies the specification at position **b**. (Figs. 2 and 3)

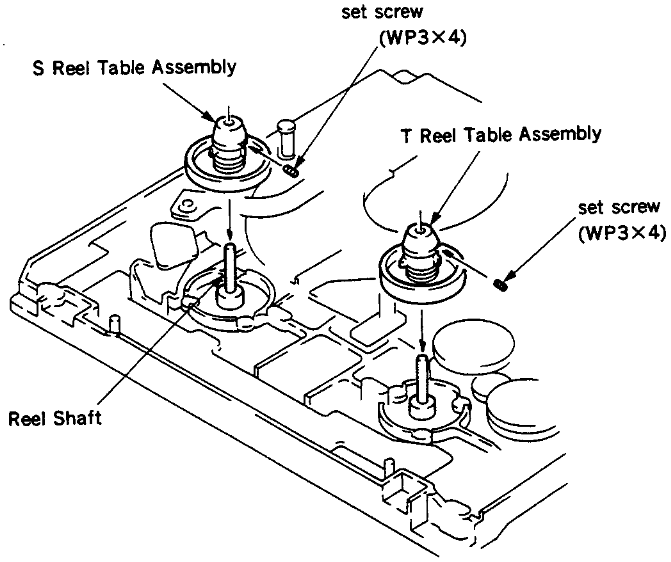

set screw
(WP3×4)
S Reel Table Assembly
T Reel Table Assembly
set screw
(WP3×4)
Reel Shaft

Fig. 1

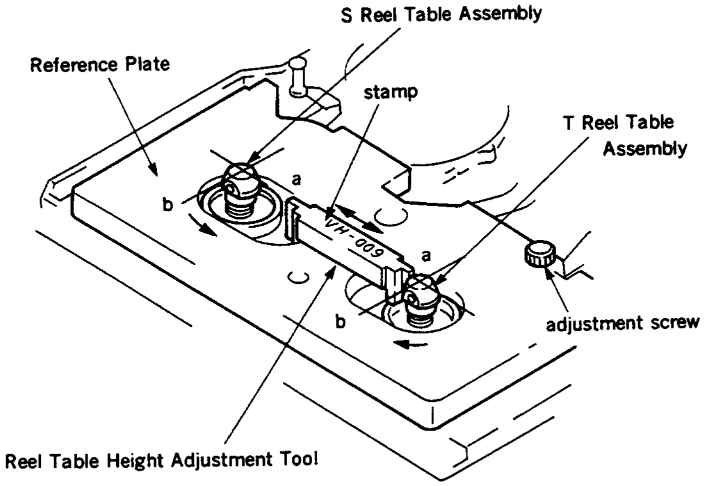

S Reel Table Assembly
Reference Plate
stamp
T Reel Table Assembly
a
b
a
b
adjustment screw
Reel Table Height Adjustment Tool

Fig. 2

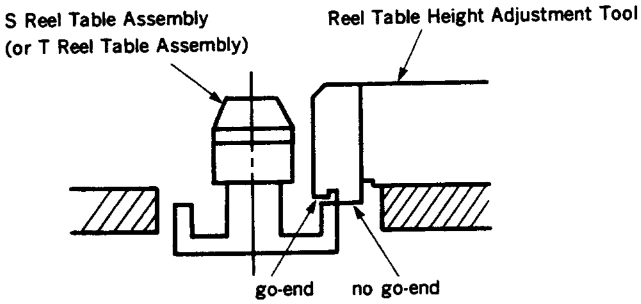

S Reel Table Assembly
(or T Reel Table Assembly)
Reel Table Height Adjustment Tool
go-end
no go-end

Fig. 3

Spec.:
The height of the S side (T side) reel table must pass at the go-end of the reel table height adjustment tool and stop at the no-go end.

4-18. REEL BRAKE ASS'Y REPLACEMENT

(1) Remove the cassette compartment according to sub-section 4-2.
(2) Remove the harness of the LE-80 board from the claw of the reel brake ass'y. (surface of chassis) (Fig. 1)
(3) Disconnect connector CN656W of the solenoid harness from the HN-160 board. (surface of chassis) (Fig. 1)
(4) Remove two screws, then remove the reel brake ass'y. (back side of chassis) (Fig. 1)
(5) Remove the spring, then the claw of the M clamp, then remove the brake arm (S) ass'y and the brake arm (T) ass'y. (Fig. 2)
(6) Raise part A of the B slider in the direction of arrow B, then remove the claw from the iron core of the solenoid, and pull out the B slider in the direction of arrow C. (Fig. 2)
(7) Remove two screws and two washers, then remove the solenoid. (Fig. 2)

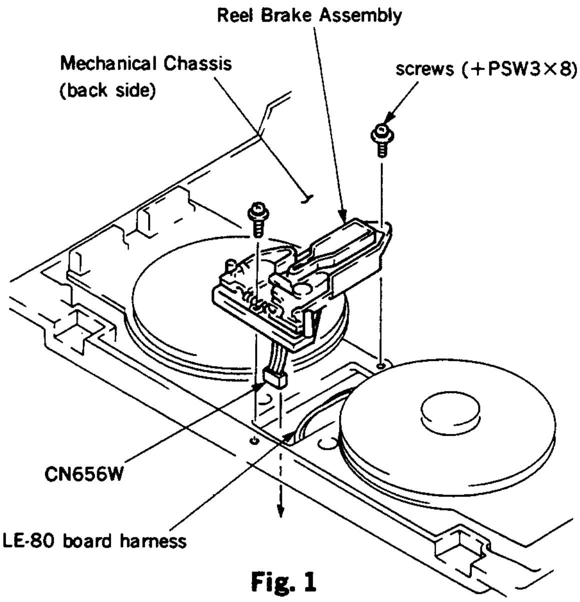

Reel Brake Assembly
Mechanical Chassis
(back side)
screws (+PSW3×8)
CN656W
LE-80 board harness

Fig. 1

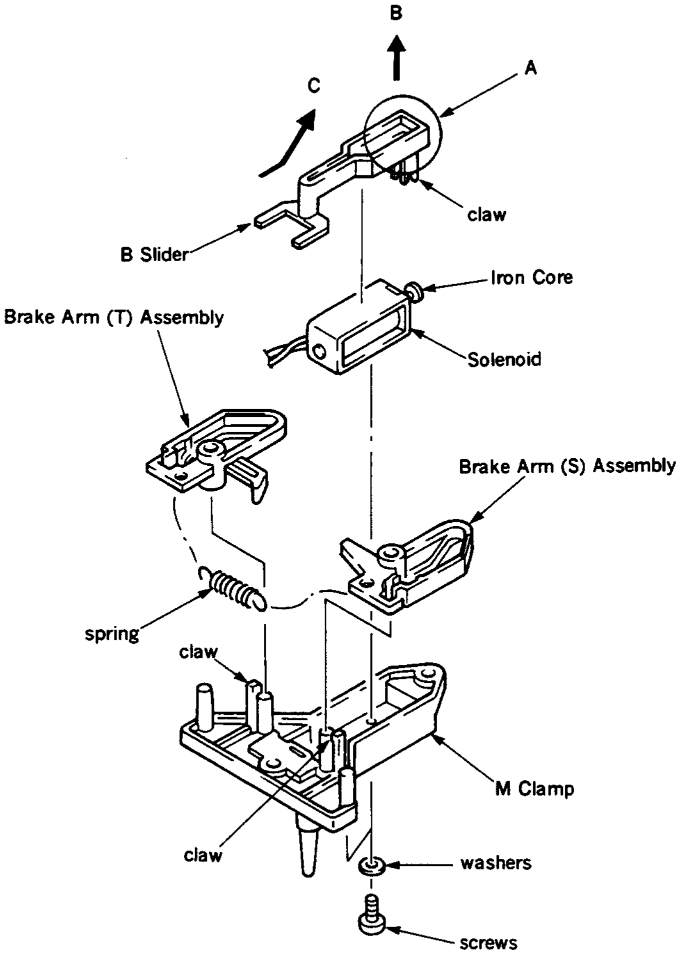

B
A
C
claw
B Slider
Iron Core
Brake Arm (T) Assembly
Solenoid
Brake Arm (S) Assembly
spring
claw
M Clamp
claw
washers
screws

Fig. 2

4-19. REEL MOTOR REPLACEMENT

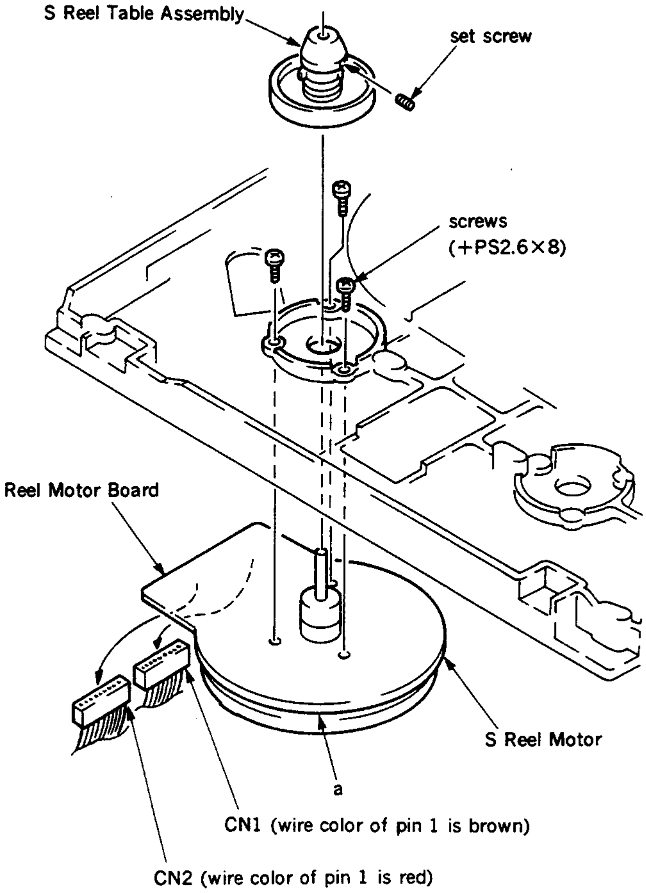
Tools :
Reference plate (J-6380-080-A)
Reel table height adjustment tool (J-6380-090-A)
Hex wrench screwdriver (width 1.5 mm)

- The procedure of replacing the reel motor is the same for both the S side and the T side. Here, the procedure of replacing the S side reel motor is described.

(1) Remove the cassette compartment according to sub-section 4-2.
(2) Remove the S side reel table ass'y according to sub-section 4-17.
(3) Disconnect two connectors CN1 and CN2 from the reel motor board.
(4) Remove three screws, then remove the S side reel motor.

Note : Do not touch the outer periphery (**a** part) of the reel motor with the fingers.

[**Adjustment after installation**]
(1) Adjust the height of the S side reel table ass'y according to sub-section 4-17.


S Reel Table Assembly
set screw
screws
(+PS2.6×8)
Reel Motor Board
S Reel Motor
a
CN1 (wire color of pin 1 is brown)
CN2 (wire color of pin 1 is red)

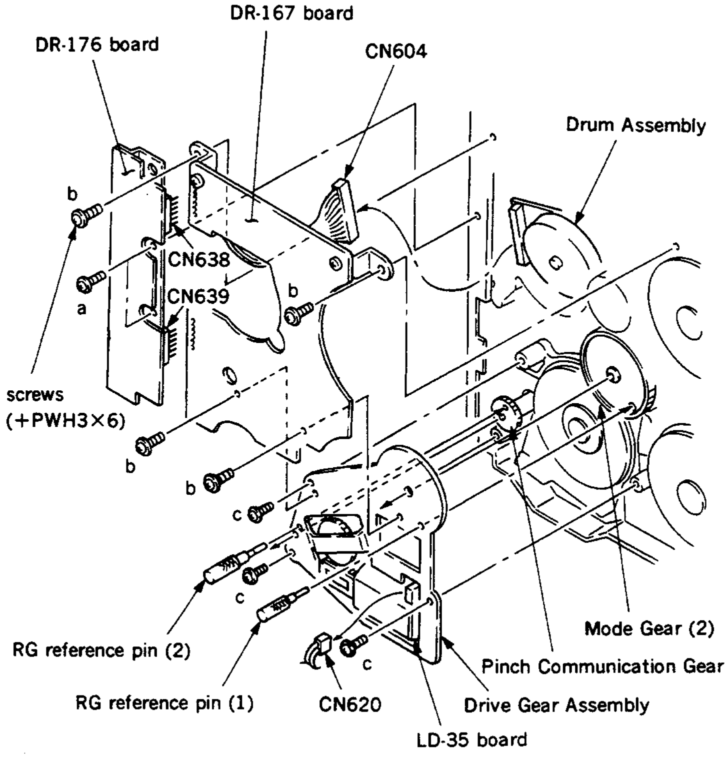
4-20. DRIVE GEAR ASS'Y REPLACEMENT

Tools :
RG reference pin (1) (J-6380-040-A)
RG reference pin (2) (J-6380-050-A)

(1) Remove the LDB brake ass'y from the drive gear ass'y using the procedure in sub-section 4-32.
(2) Remove two screws (a), then disconnect two connectors CN638 and CN639 from the DR-167 board, and remove the DR-176 board.
(3) Disconnect connector CN604 from the drum ass'y.
(4) Disconnect connector CN620 from the LD-35 board of the cam motor ass'y.
(5) Remove four screws (b), then remove the DR-176 board.
(6) Remove three screws (c), then remove the drive gear ass'y.
Take care not to rotate the mode gear (2) and the pinch communication gear more than one revolution after removing the drive gear ass'y.

Precautions for installation

①Pass RG reference pin (1) and RG reference pin (2) through the holes shown in the drawing of the drive gear ass'y, then align the pins with the holes in the mode gear (2) and pinch communication gear, respectively, and install the drive gear ass'y. (By aligning the pins with the holes in the gears, the meshing phases of the drive gear system will coincide.)


DR-167 board
DR-176 board
CN604
Drum Assembly
b
CN638
a
CN639
b
screws
(+PWH3×6)
b
b
c
c
c
c
Mode Gear (2)
RG reference pin (2)
Pinch Communication Gear
RG reference pin (1)
CN620
Drive Gear Assembly
LD-35 board

4-20-1. Cam Motor Ass'y Replacement

(1) Remove the screw, then remove the cam motor ass'y. (Fig. 1)

Precautions for installation

①Align the groove of the cam motor ass'y with part **a** of the drive gear ass'y. (Fig. 1)

②Align the hole in the cam motor ass'y with the projection on the drive gear ass'y. (Fig. 1)

③Set the cam motor parallel to the **b** face of the drive gear ass'y, then screw it fixed. (Fig. 2)

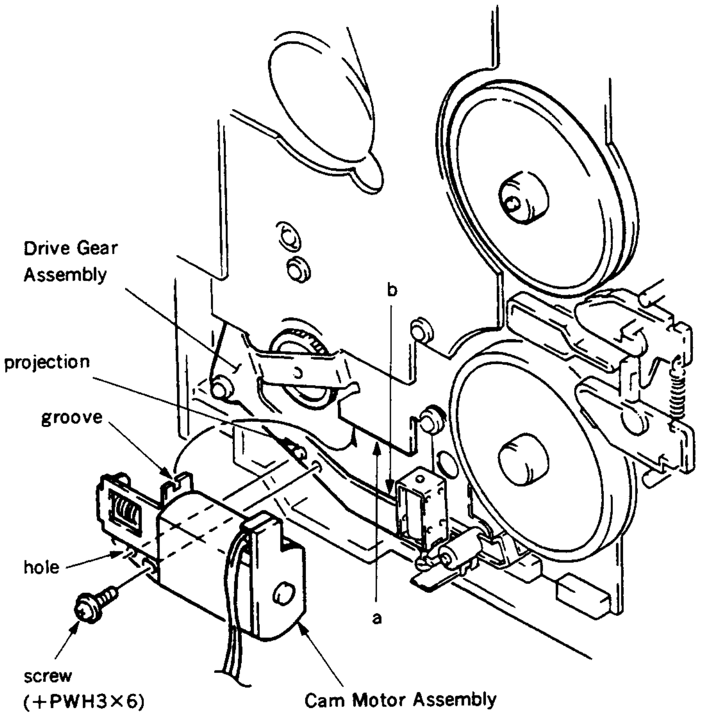

Drive Gear Assembly
projection
groove
hole
screw (+PWH3×6)
b
a
Cam Motor Assembly

Fig. 1

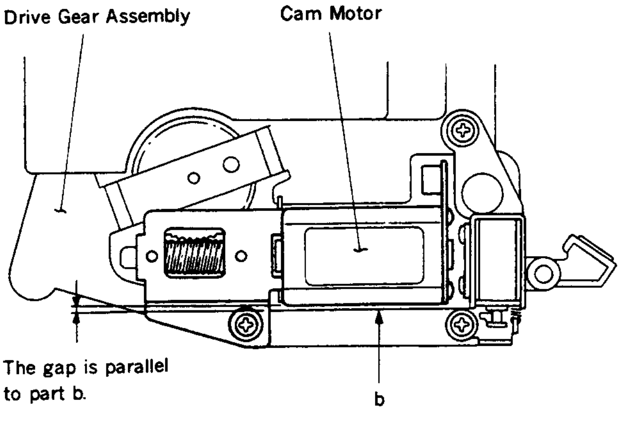

Drive Gear Assembly
Cam Motor
The gap is parallel to part b.
b

Fig. 2

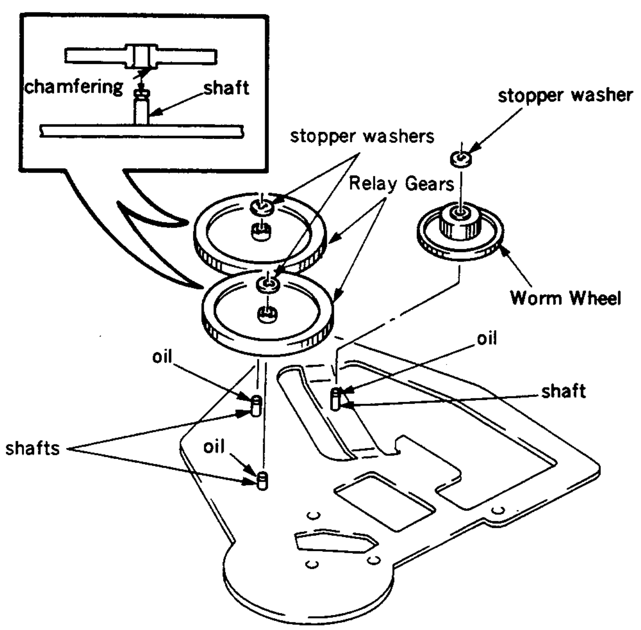
4-20-2. Relay Gears and Worm Wheel Replacement

Tool:
Sony oil (7-661-018-18)

(1) Remove the stop washer, then remove the relay gear or the worm wheel.

Precautions for installation

①Clean the shafts with cleaning fluid, then apply 1/2 a drop of Sony oil.


chamfering
shaft
stopper washer
stopper washers
Relay Gears
Worm Wheel
oil
oil
shaft
shafts
oil

4-21. MODE GEAR (2) ASS'Y REPLACEMENT

Tool:
RG reference pin (2) (J-6380-050-A)

(1) Remove the drive gear ass'y according to sub-section 4-20.
(2) Remove the stop washer, then remove the mode gear (2) ass'y from the shaft. (Fig. 1)

Precautions for installation

①Push the loading gear (right) in the direction of arrow A. Pass RG reference pin (2) through the hole in the mode gear (2) ass'y, then align it with the ⁕ mark on the chassis, then engage the mode gear ass'y with the FR drive gear, and install it. (Figs. 1 and 2)
(By aligning the pin with the holes in the gears, the meshing phases of the mode gear ass'y and the FR drive gear will coincide.)

②Align the meshing phases of the gears, and install the drive gear ass'y according to sub-section 4-20.

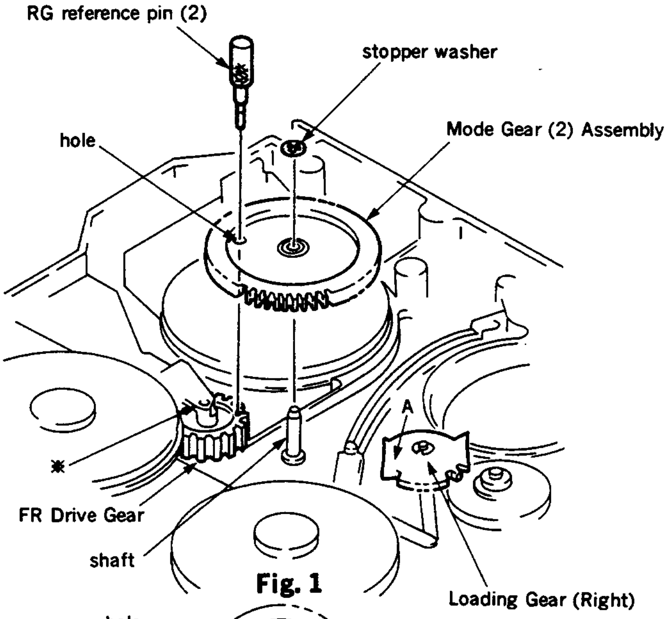

RG reference pin (2)
stopper washer
hole
Mode Gear (2) Assembly
A
⁕
FR Drive Gear
shaft
Loading Gear (Right)

Fig. 1

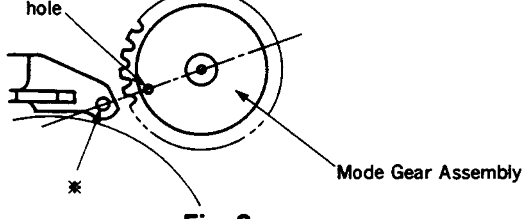

hole
⁕
Mode Gear Assembly

Fig. 2

4-22. LOADING GEAR (RIGHT) ASS'Y REPLACEMENT

Tool :
MOLYKOTE grease EM-30LG (J-6090-014-A)
or MOLYKOTE grease EM-30L : DOW CORNING Corp.

(1) Remove the drive gear ass'y according to sub-section 4-20.
(2) Remove the mode gear (2) ass'y according to sub-section 4-21.
(3) Rotate the gear part of the loading gear (right) by hand in the direction of the arrow to the position shown in Fig. 1.
(4) Remove two E rings, then remove the loading gear (right) ass'y. (Fig. 2)

Note : Take care not to deform the arm of the loading gear (right) ass'y.

Precautions for installation

①Align the mark on the loading gear (left) with the center point between two teeth on the loading gear (right), then install the chassis shaft and the shaft of the shuttle (right). (Fig. 3)
②Smear a small amount of grease to the part of the loading gear (right) ass'y indicated in the figure. (Fig. 2)
③Align the engagement phases of the mode gear (2) ass'y and the drive gear ass'y ,then install the gear ass'ys, according to sub-sections 4-21 and 4-20.

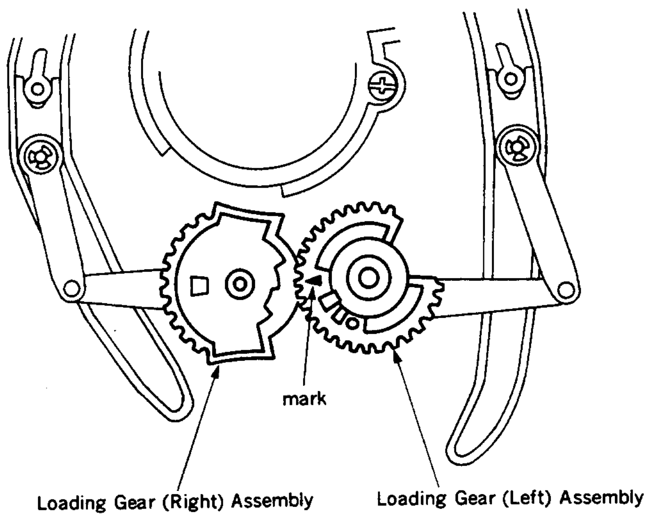

mark
Loading Gear (Right) Assembly
Loading Gear (Left) Assembly

Fig. 1

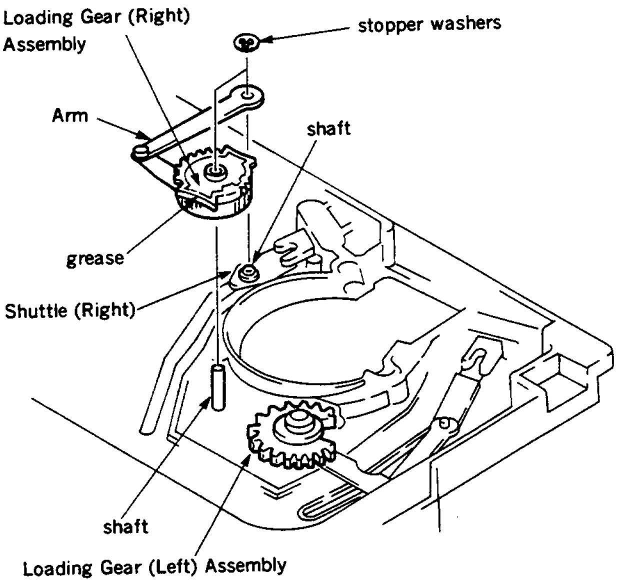

Loading Gear (Right) Assembly
stopper washers
Arm
shaft
grease
Shuttle (Right)
shaft
Loading Gear (Left) Assembly

Fig. 2

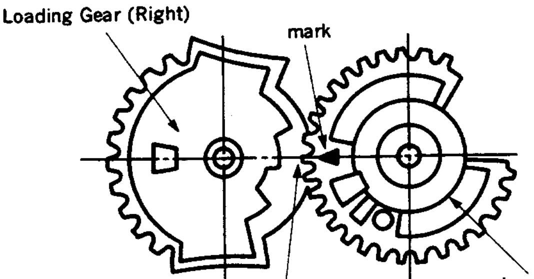

Loading Gear (Right)
mark
Loading Gear (Left)
two teeth

Fig. 3

4-23. LOADING GEAR (LEFT) ASS'Y REPLACEMENT

(1) Remove the cam motor ass'y according to subsection 4-20-1. (Fig. 1)

(2) Rotate the worm wheel of the drive gear clockwise with the fingers until the loading gear (left) ass'y moves to the position shown in Fig. 2. (Figs. 1 and 2)

(3) Remove two stop washers, then remove the loading gear (left) ass'y. (Fig. 3)

Note: Take care not to deform the arm of the loading gear (left) ass'y.

Precautions for installation

①Align the mark on the loading gear (left) with the center point between two teeth of the loading gear (right), then install the gears on the shaft of the chassis and the shaft of the shuttle (left). (Fig. 4)

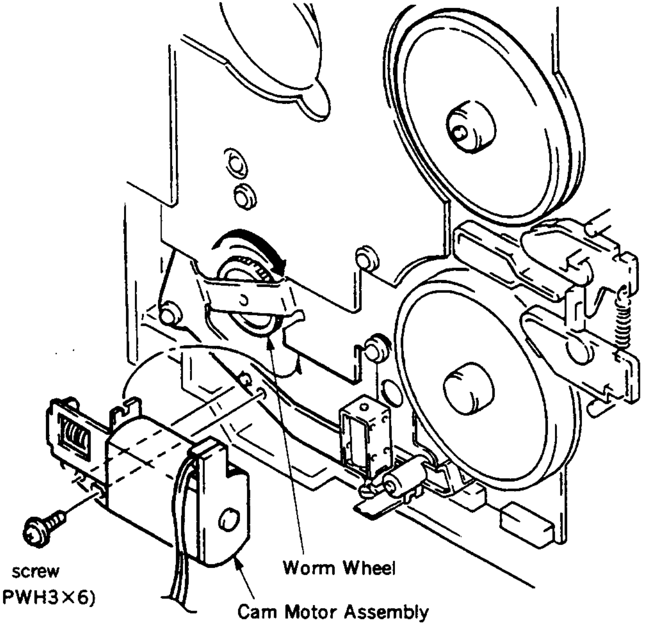

screw
(+PWH3×6)
Worm Wheel
Cam Motor Assembly

Fig. 1

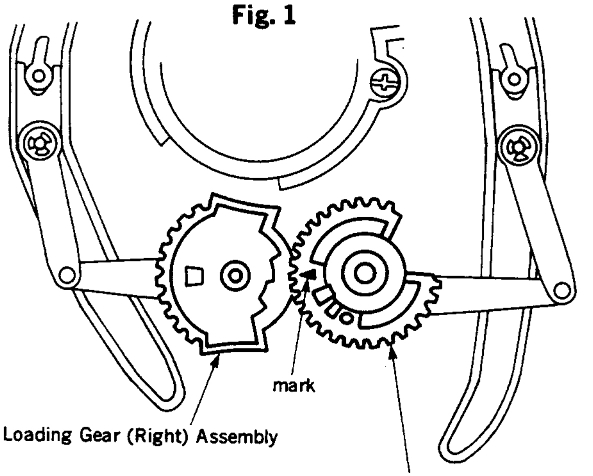

mark
Loading Gear (Right) Assembly
Loading Gear (Left) Assembly

Fig. 2

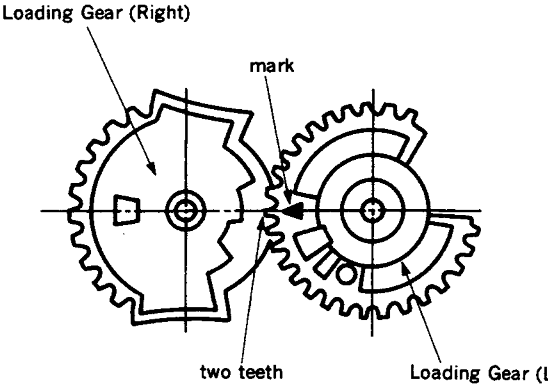

Loading Gear (Right)
mark
two teeth
Loading Gear (Left)

Fig. 4

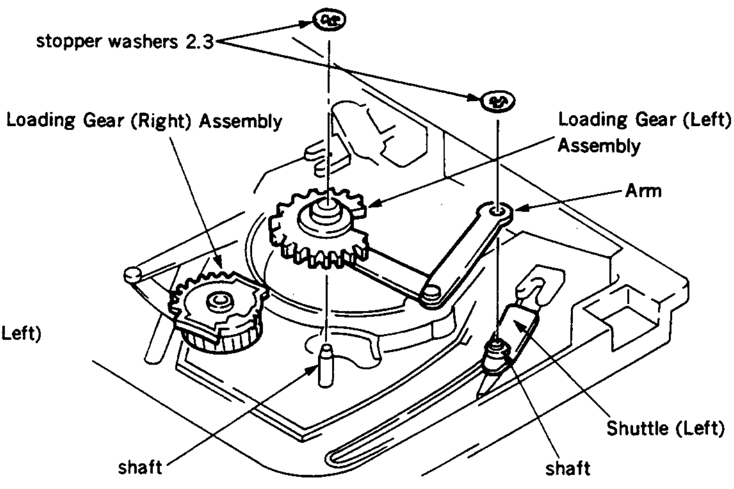

stopper washers 2.3
Loading Gear (Right) Assembly
Loading Gear (Left) Assembly
Arm
Shuttle (Left)
shaft
shaft

Fig. 3

4-24. SHUTTLE (RIGHT) ASS'Y REPLACEMENT

Tools:
Reference plate (J-6380-080-A)
Master block (J-6380-550-A)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Remote controller (SVRM-100, RM-V100, or RM-V200)

(1) Remove the cassette compartment according to sub-section 4-2.
(2) Refer to sub-section 4-23, then move the loading gear (right) ass'y to the position shown in Fig. 1.
(3) Remove the stop washer, then remove the arm of the loading gear (right) ass'y from the shaft of the shuttle plate ass'y. (Fig. 2)
Note: Take care not to deform the arm of the loading gear (right) ass'y.
(4) Remove the screw, then remove the shuttle (right) ass'y and the shuttle plate ass'y. (Fig. 3)
Note: Move the shuttle (right) ass'y in the un-threading end direction to ensure that it does not strike the drum ass'y, then remove it.

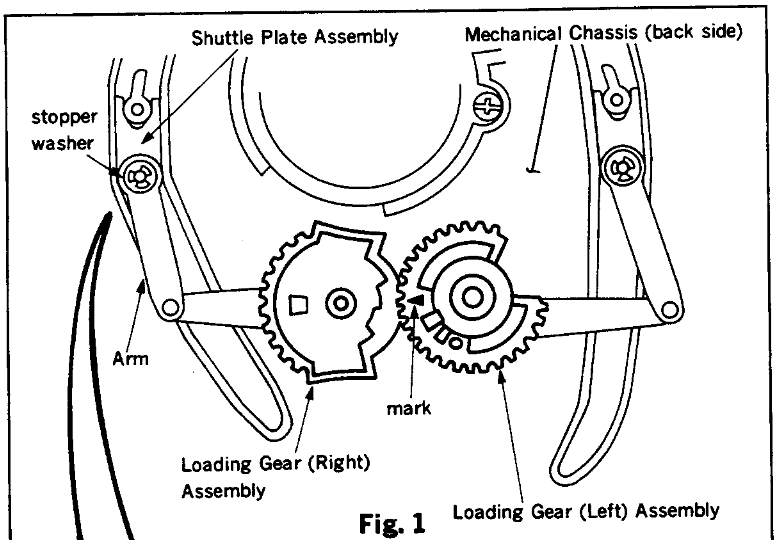

Shuttle Plate Assembly
Mechanical Chassis (back side)
stopper washer
Arm
mark
Loading Gear (Right) Assembly
Loading Gear (Left) Assembly

Fig. 1

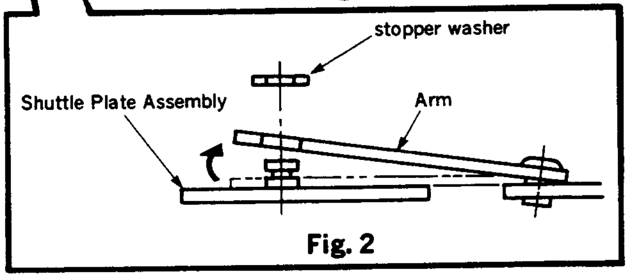

stopper washer
Shuttle Plate Assembly
Arm

Fig. 2

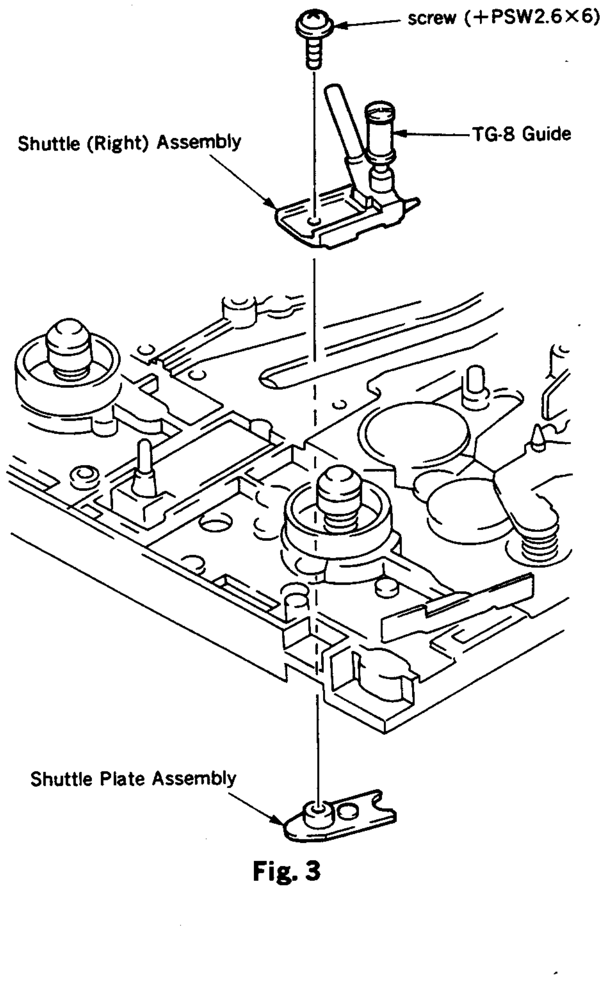

screw (+PSW2.6×6)
Shuttle (Right) Assembly
TG-8 Guide
Shuttle Plate Assembly

Fig. 3

Precautions for installation

①Put the screw as shown in Fig. 4 when installing the shattle (right) ass'y to the shattle plate ass'y.

[**Adjustment after replacement**]

TG-8 guide height adjustment

(1) Press the PLAY button on the remote controller for the threading completion mode. (See sub-section 4-1-3.)
(2) Clean the mounting face of the reference plate and the four mounting faces on the chassis with cleaning fluid.
(3) Install the reference plate on the chassis. (Fig. 5) (If the reference plate moves about when the top of the plate is touched gently with the fingers at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)
(4) Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.
(5) Set the master block with the H10 stamped mark upward, then place it against the TG-8 guide from the direction shown in the figure. (Fig. 5)
(6) Using the guide adjustment screwdriver, turn the upper flange on the guide until the specification is satisfied. (Fig. 6)
(7) Perform tape run alignments of section 6.

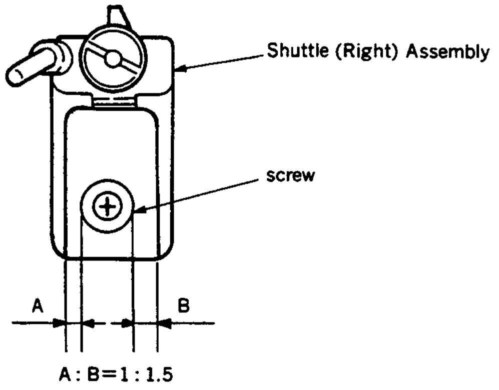

Shuttle (Right) Assembly
screw
A
B
A : B=1 : 1.5

Fig. 4

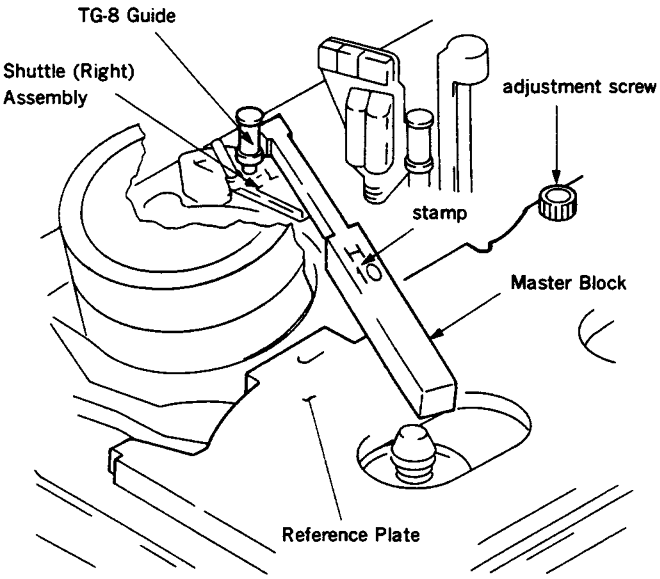

TG-8 Guide
Shuttle (Right) Assembly
adjustment screw
stamp
H10
Master Block
Reference Plate

Fig. 5

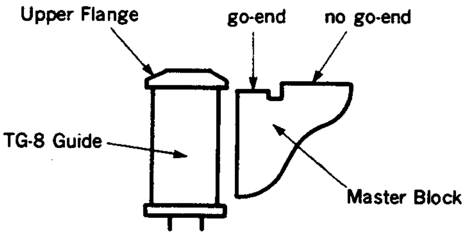

Upper Flange
go-end
no go-end
TG-8 Guide
Master Block

Fig. 6

Spec. :
The height of the upper flange must pass at the go-end of the master block and stop at the no go-end.

4-25. TG-8 GUIDE REPLACEMENT

Tools :

Reference plate (J-6380-080-A)
Master block (J-6380-550-A)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Hex wrench screwdriver (width 0.89 mm)
Remote controller (SVRM-100, RM-V100, or RM-V200)

(1) Remove the cassette compartment according to sub-section 4-2.
(2) Loosen the set screw with a hex wrench. (Fig. 1)
(3) Rotate the TG-8 guide counterclockwise with the guide adjustment screwdriver, and remove it. (Fig. 1)

Precautions for installation

①Clean the mounting face of the reference plate and the four mounting faces on the chassis with cleaning fluid.
②Install the reference plate on the chassis. (Fig. 2) (If the reference plate moves about when the top of the plate is touched gently with the fingers at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)
③Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.
④Set the master block with the H10 stamped mark upward, then place it against the TG-8 guide from the direction shown in the figure, and tighten the set screw until the upper flange is roughly the same height as the go-end of the master block. (Figs. 2 and 3) (Tightening torque of set screw : 78×10^{-3} to 98×10^{-3} N•m (0.8 to 1 kg•cm))

[**Adjustment after replacement**]

(1) Perform TG-8 guide height adjustment according to sub-section 4-24.
(2) Perform tape run alignments of section 6.

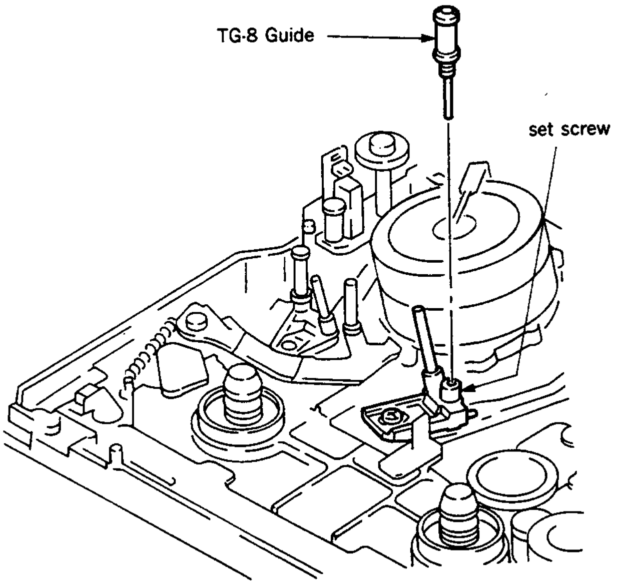


Fig. 1

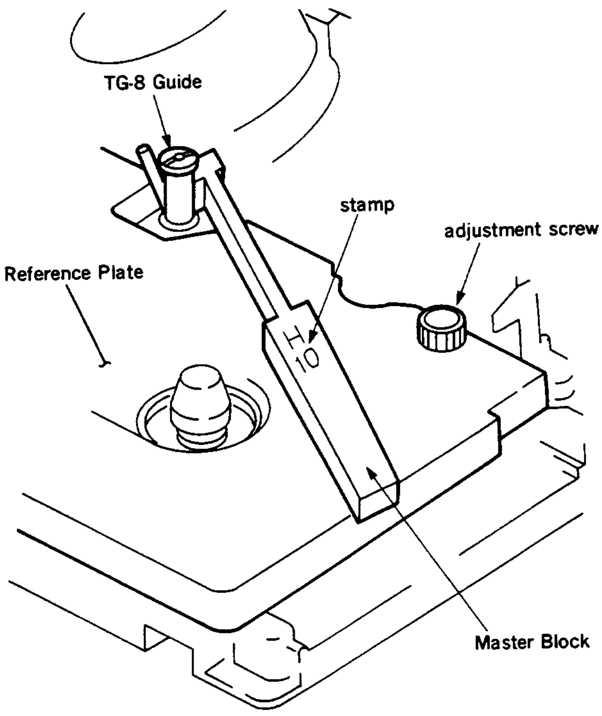


Fig. 2

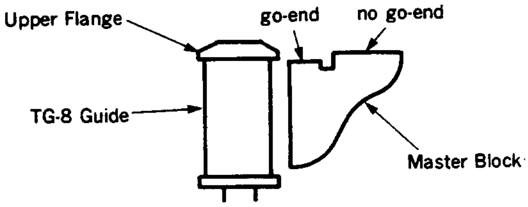


Fig. 3

4-26. SHUTTLE (LEFT) ASS'Y REPLACEMENT

Tools:
Reference plate (J-6380-080-A)
Master block (J-6380-550-A)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Remote controller: (SVRM-100, RM-V100, or RM-V200)

(1) Remove the cassette compartment according to sub-section 4-2.
(2) Remove the stop washer, then remove the arm of the loading gear (left) ass'y from the shaft of the shuttle plate ass'y. (Fig. 1)

Note: Take care not to deform the arm of the loading gear (left) ass'y.

(3) Remove the screw, then remove the shuttle (left) ass'y and the shuttle plate ass'y. (Fig. 2)

Precaution for installation

①The tension regulator ass'y and shuttle (left) ass'y must be in the position shown in Fig. 3.
②Put the screw as shown in Fig. 4 when installing the shattle (left) ass'y to the shattle plate ass'y.

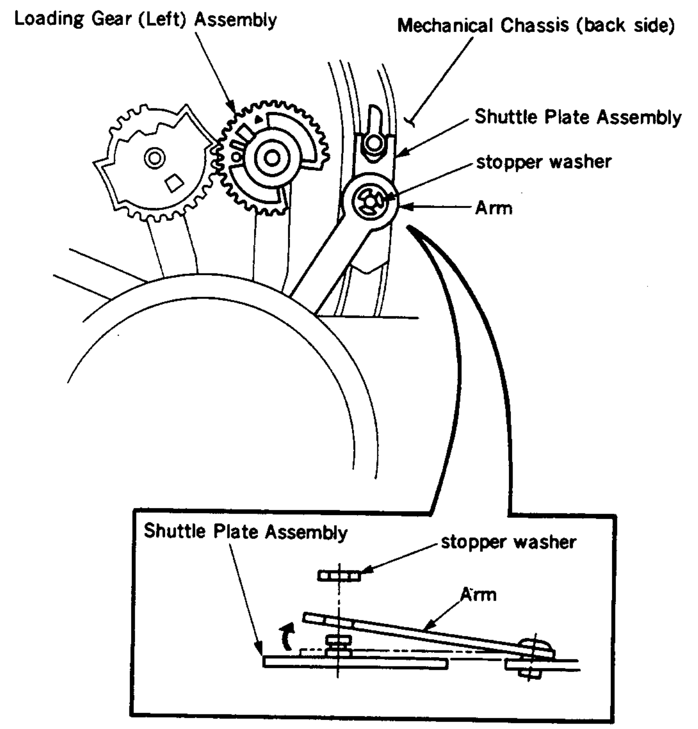

Loading Gear (Left) Assembly
Mechanical Chassis (back side)
Shuttle Plate Assembly
stopper washer
Arm
Shuttle Plate Assembly
stopper washer
Arm

Fig. 1

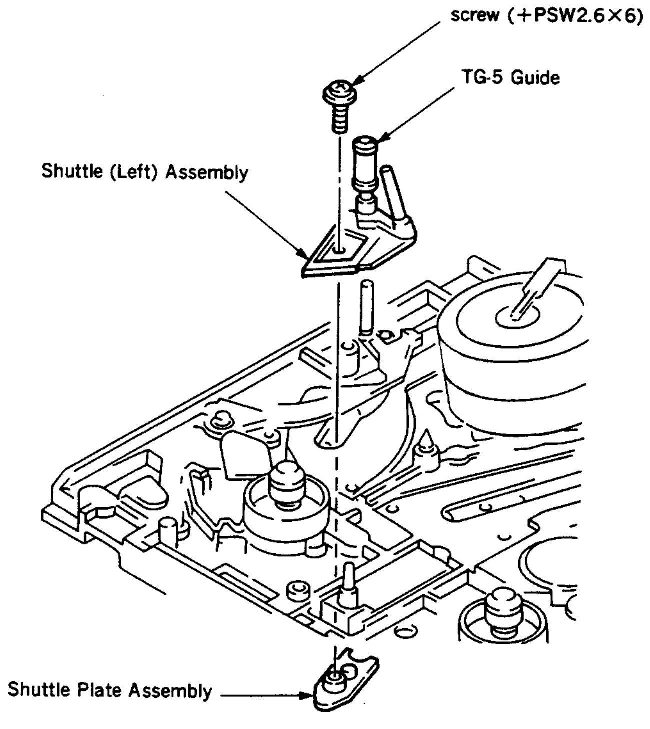

screw (+PSW2.6×6)
TG-5 Guide
Shuttle (Left) Assembly
Shuttle Plate Assembly

Fig. 2

[Adjustment after replacement]

TG-5 guide height adjustment

(1) Press the PLAY button on the remote controller for the threading completion mode. (See sub-section 4-1-3.)

(2) Clean the mounting face of the reference plate and the four mounting faces on the chassis with cleaning fluid.

(3) Install the reference plate on the chassis. (Fig. 5) (If the reference plate moves about when the top of the plate is touched gently with the fingers at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)

(4) Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.

(5) While moving the stabilizer in the direction of the arrow, set the master block with the H10 stamped mark upward, then place it against the TG-5 guide from the direction shown in the figure. (Fig. 5)

(6) Using the guide adjustment screwdriver, turn the upper flange on the guide until the specification is satisfied. (Fig. 6)

(7) Perform tape run alignments of section 6.

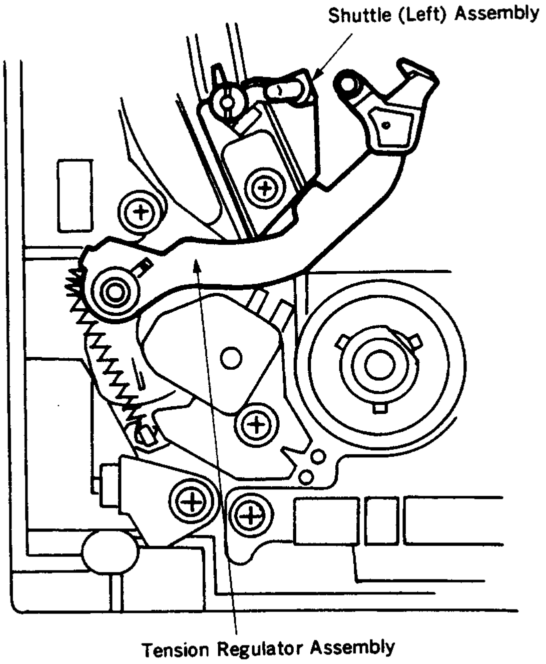

Shuttle (Left) Assembly
Tension Regulator Assembly

Fig. 3

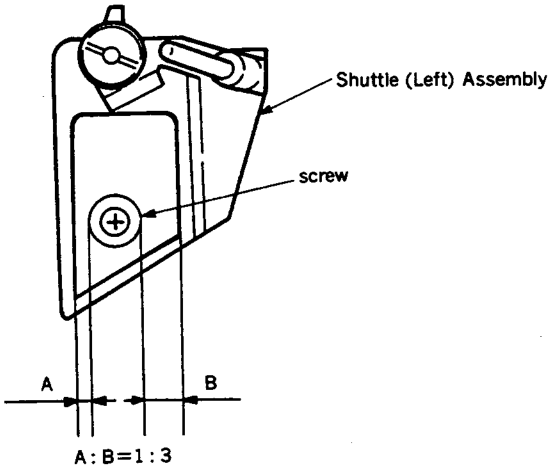

Shuttle (Left) Assembly
screw
A
B
A : B = 1 : 3

Fig. 4

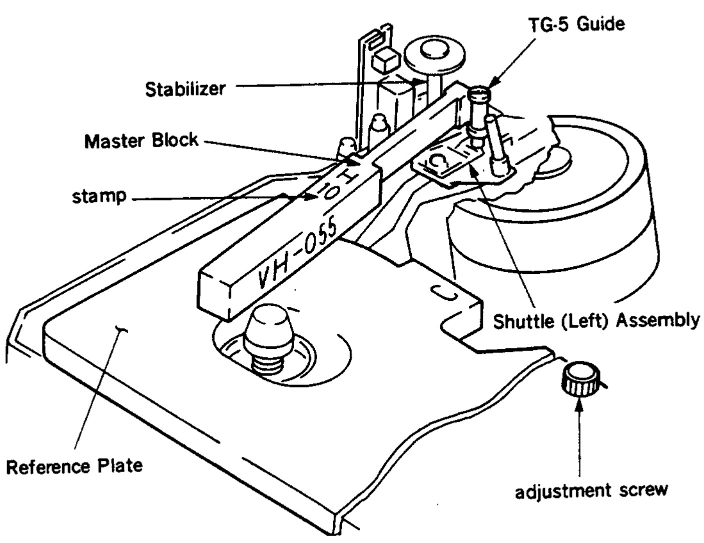

TG-5 Guide
Stabilizer
Master Block
stamp
H10
VH-055
Shuttle (Left) Assembly
Reference Plate
adjustment screw

Fig. 5

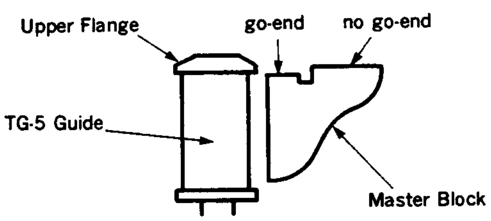

Upper Flange
go-end
no go-end
TG-5 Guide
Master Block

Fig. 6

Spec. :
The height of the upper flange must pass at the go-end of the master block and stop at the no go-end.

4-27. TG-5 GUIDE REPLACEMENT

Tools :

Reference plate (J-6380-080-A)
Master block (J06380-550-A)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Hex wrench screwdriver (width 0.89 mm)
Remote controller (SVRM-100, RM-V100, or RM-V200)

(1) Remove the cassette compartment according to sub-section 4-2.
(2) Loosen the set screw with a hex wrench. (Fig. 1)
(3) Rotate the TG-5 guide counterclockwise with the guide adjustment screwdriver, and remove it. (Fig. 1)

Precaution for installation

①Clean the mounting face of the reference plate and the four mounting faces on the chassis with cleaning fluid.

②Install the reference plate on the chassis. (Fig. 2) (If the reference plate moves about when the top of the plate is touched gently with the fingers at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)

③Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.

④Set the master block with the H10 stamped mark upward, then place it against the TG-5 guide from the direction shown in the figure, and tighten the set screw untile the upper flange is roughly the same height as the go-end of the master block. (Figs. 2 and 3)
(Tightening torque of set screw : 78×10^{-3} to 98×10^{-3} N·m (0.8 to 1 kg·cm))

[Adjustment after replacement]

(1) Perform TG-5 guide height adjustment according to sub-section 4-26.
(2) Perform tape run alignments of section 6.

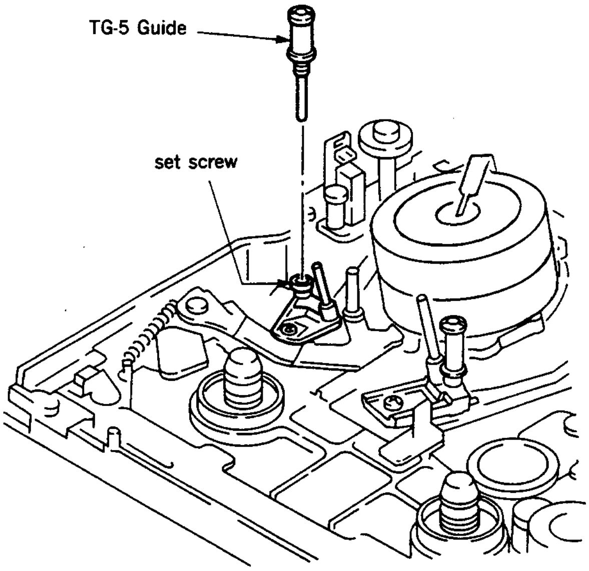


Fig. 1

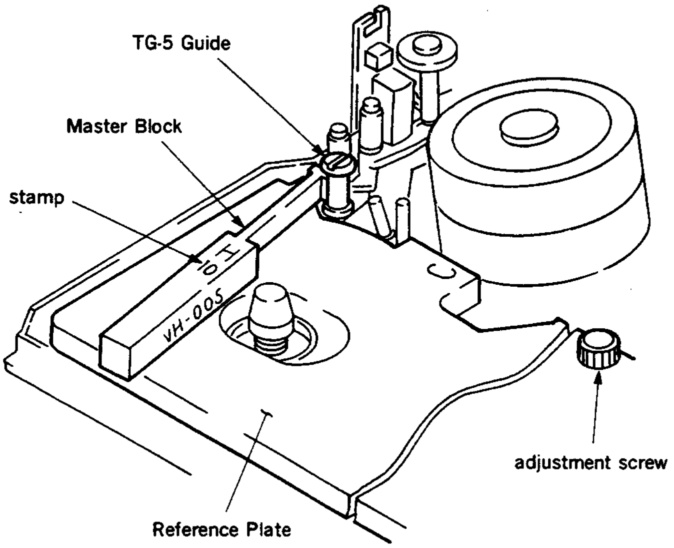


Fig. 2

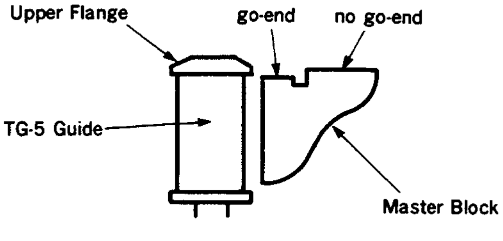


Fig. 3

4-28. SLIDE RAIL (R) REPLACEMENT

(1) Remove the cassette compartment according to sub-section 4-2.
(2) Remove the BC roller ass'y according to sub-section 4-3.
(3) Remove the shuttle (right) ass'y according to sub-section 4-24.
(4) Remove the screw, then remove the LE-80 board. (Fig. 1)
(5) Remove two screws, then remove the shuttle holder in the direction of arrow A. (Fig. 1)
(6) Remove claws **a**, **b** and **c** and also the two parts with the square hole on slide rail (R) from the chassis, then remove the slide rail (R). (Fig. 1)

Precautions for installation

①While moving the stabilizer in the direction of arrow B, fit claw **a** into the chassis, then insert projection **a** into the hole in the chassis. (Fig. 1)
②Next, align projections **b** and **c** with the holes in the chassis, then insert claws **b** and **c** and also the two parts with the square holes into the chassis. (Figs. 2 and 3)

[**Adjustment after replacement**]
(1) Perform tape run alignments of section 6.

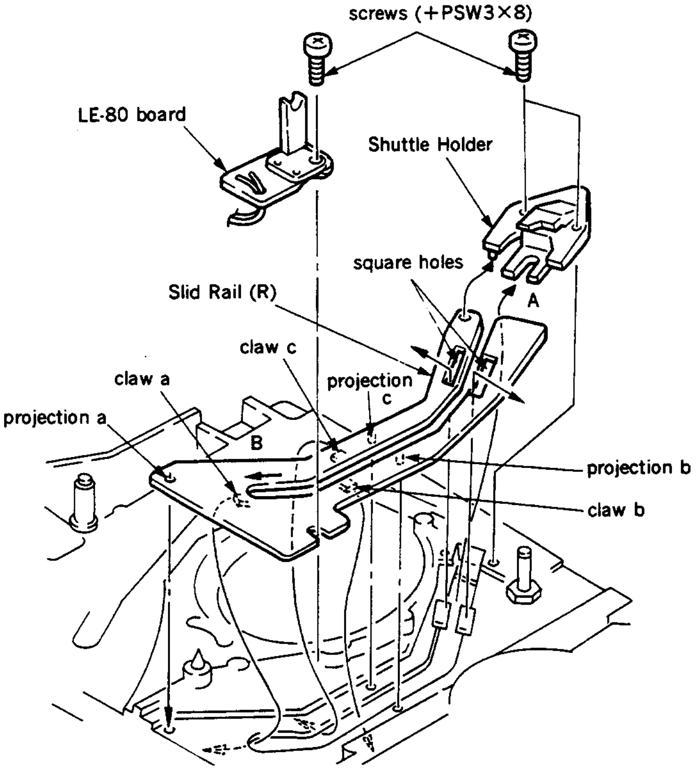

screws (+PSW3×8)
LE-80 board
Shuttle Holder
square holes
Slid Rail (R)
A
claw c
claw a
projection c
projection a
B
projection b
claw b

Fig. 1

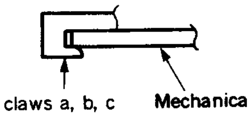

claws a, b, c
Mechanical Chassis

Fig. 2

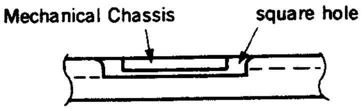

Mechanical Chassis
square hole

Fig. 3

4-29. SLIDE RAIL (L) REPLACEMENT

(1) Remove the cassette compartment according to sub-section 4-2.
(2) Remove the tension regulator ass'y and the STD ass'y according to sub-section 4-7.
(3) Remove the tape stabilizer ass'y according to sub-section 4-9.
(4) Remove the shuttle (left) ass'y according to sub-section 4-26.
(5) Remove two screws, then remove the shuttle holder in the direction of arrow A. (Fig. 1)
(6) Remove three claws **a**, **b** and **c** and two parts with the square hole on slide rail (L) from the chassis, then remove the slide rail (L). (Fig. 1)

Precautions for installation

①While moving the slide rail in the direction of arrow B, fit claw **a** into the chassis, then insert projection **a** into the hole in the chassis. (Fig. 1)

②Next, align projections **b** and **c** with the holes in the chassis, then insert claws **b** and **c** and also the two parts with the square hole into the chassis. (Figs. 2 and 3)

[**Adjustment after replacement**]

(1) Adjust the height of the TG-3 guide once again according to sub-section 4-9.
(2) Adjust the position of the tension regulator once again according to sub-section 4-7.
(3) Adjust the tape tension once again according to sub-section 6-2.
(4) Perform tape run alignments of section 6.

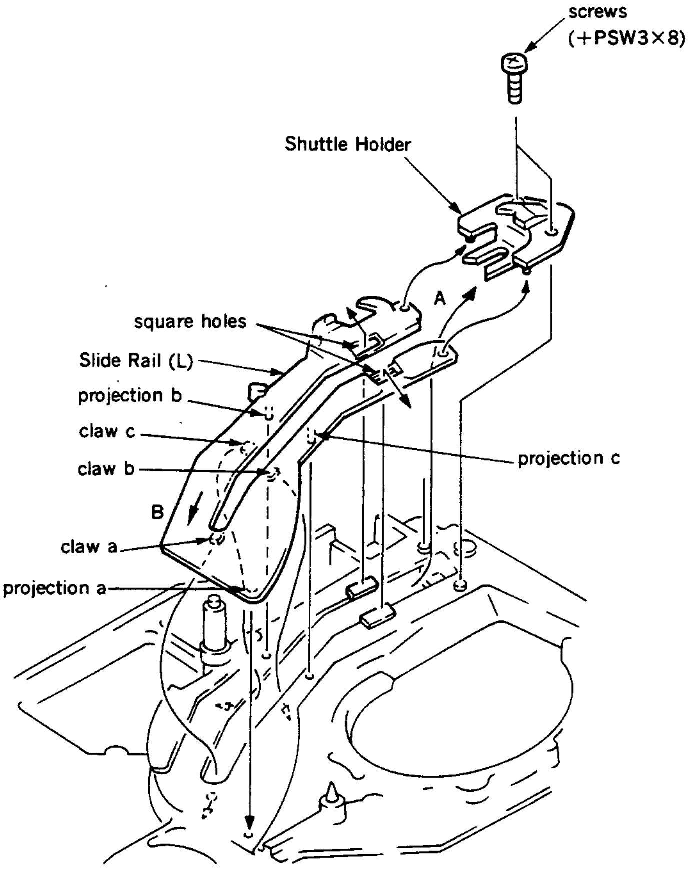

screws
(+PSW3×8)
Shuttle Holder
A
square holes
Slide Rail (L)
projection b
claw c
claw b
projection c
B
claw a
projection a

Fig. 1

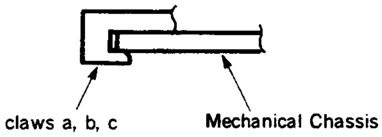

claws a, b, c
Mechanical Chassis

Fig. 2

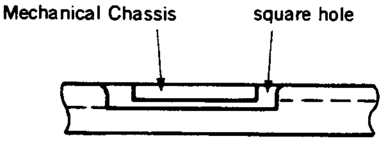

Mechanical Chassis
square hole

Fig. 3

4-30. CAPSTAN MOTOR REPLACEMENT

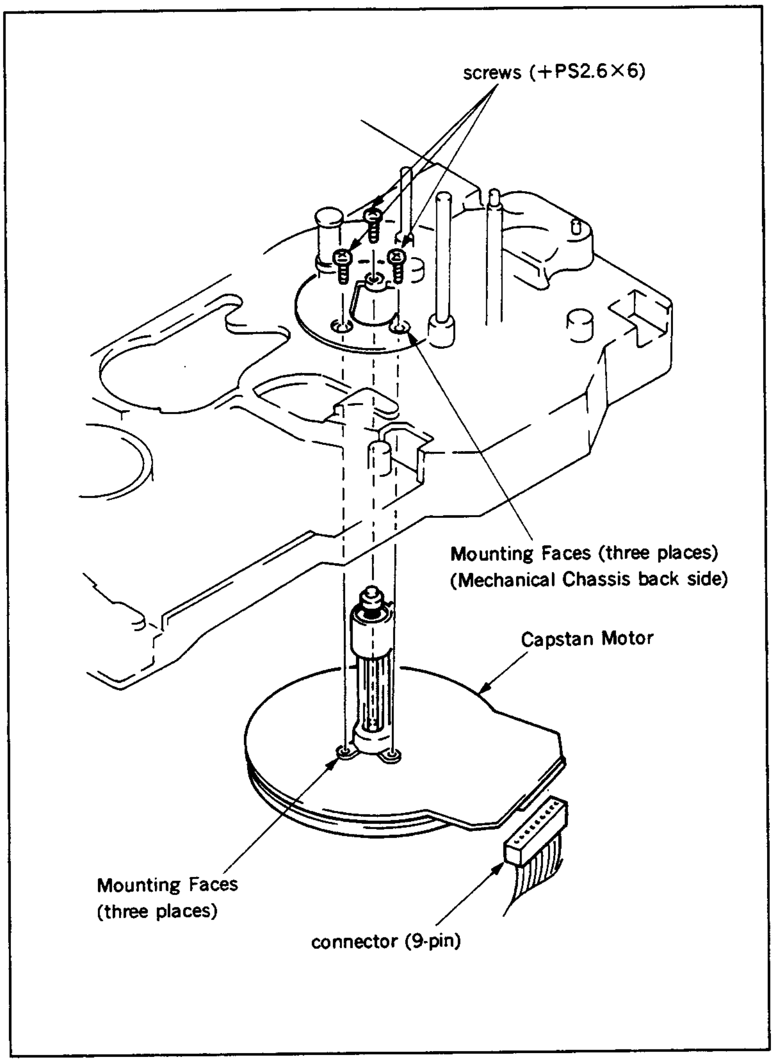
(1) Remove the drive gear ass'y according to subsection 4-20.
(2) Disconnect the 9-pin connector from the capstan motor board.
(3) Remove three screws, then remove the capstan motor.

Precaution for installation

①Clean the three mounting faces at the back of the chassis and the three mounting faces of the capstan motor with cleaning fluid.
②Take care not to damage the capstan shaft.

[Adjustment after replacement]

(1) Perform tape run alignments of section 6.


screws (+PS2.6×6)
Mounting Faces (three places)
(Mechanical Chassis back side)
Capstan Motor
Mounting Faces
(three places)
connector (9-pin)

4-31. PINCH SOLENOID ASS'Y REPLACEMENT

(1) Disconnect connector CN118 from the SS board, then remove the harness from the wiring clamp. (Fig. 1)

(2) Pull out the pinch roller block ass'y using the procedure in sub-section 4-12.

(3) Remove the screw, then remove the retainer and the poly-slider-washer. (Fig. 2)

(4) Remove two screws, then raise the pinch solenoid ass'y and remove it. (Fig. 2)

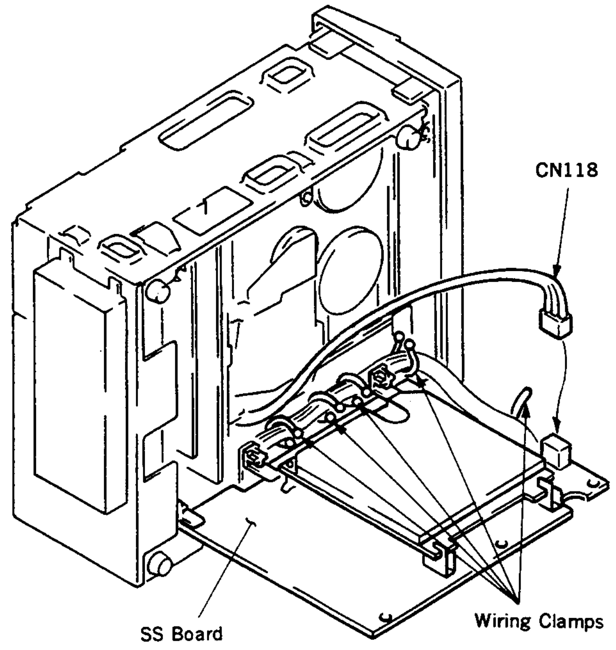

CN118
SS Board
Wiring Clamps

Fig. 1

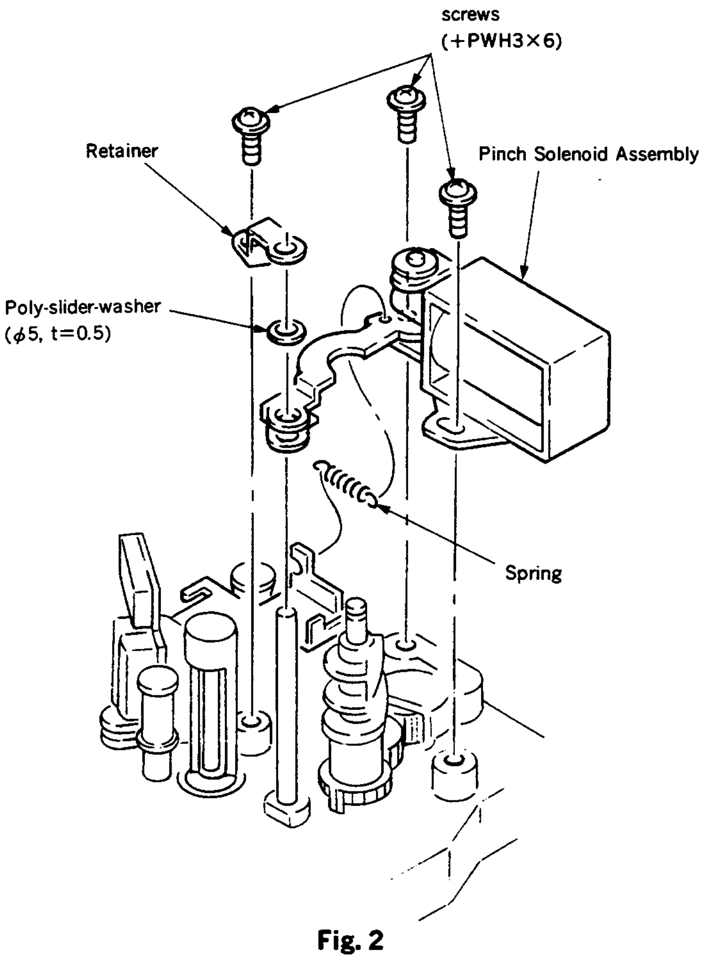

screws
(+PWH3×6)
Retainer
Pinch Solenoid Assembly
Poly-slider-washer
(ϕ5, t=0.5)
Spring

Fig. 2

(5) Remove two screws, then remove the solenoid from the solenoid base. (Fig. 3)

(6) Remove the stopper washer, then remove the solenoid pin and the pressure lever from the iron core. (Fig. 3)

Precautions for installation

①Align the longitudinal hole of the pinch solenoid ass'y with the boss of the mechanical chassis, then screw in the fixing screws but do not tighten them hard. (Fig. 4)

②Insert a flat blade screwdriver at the point indicated by A in the drawing, then turn it clockwise so that the pinch solenoid ass'y moves in the direction of the arrow as far as it will go, and tighten the two screws hard. (Fig. 4)

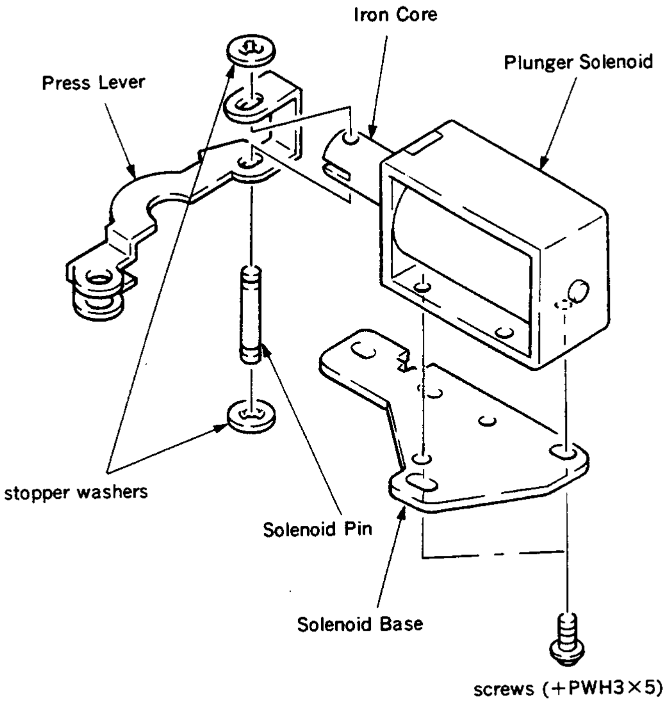

Iron Core
Plunger Solenoid
Press Lever
stopper washers
Solenoid Pin
Solenoid Base
screws (+PWH3×5)

Fig. 3

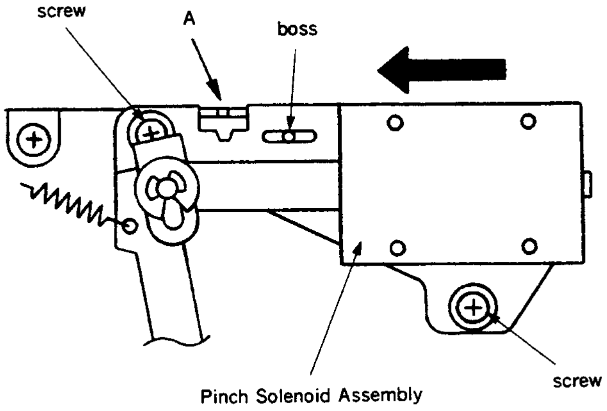

screw
A
boss
Pinch Solenoid Assembly
screw

Fig. 4

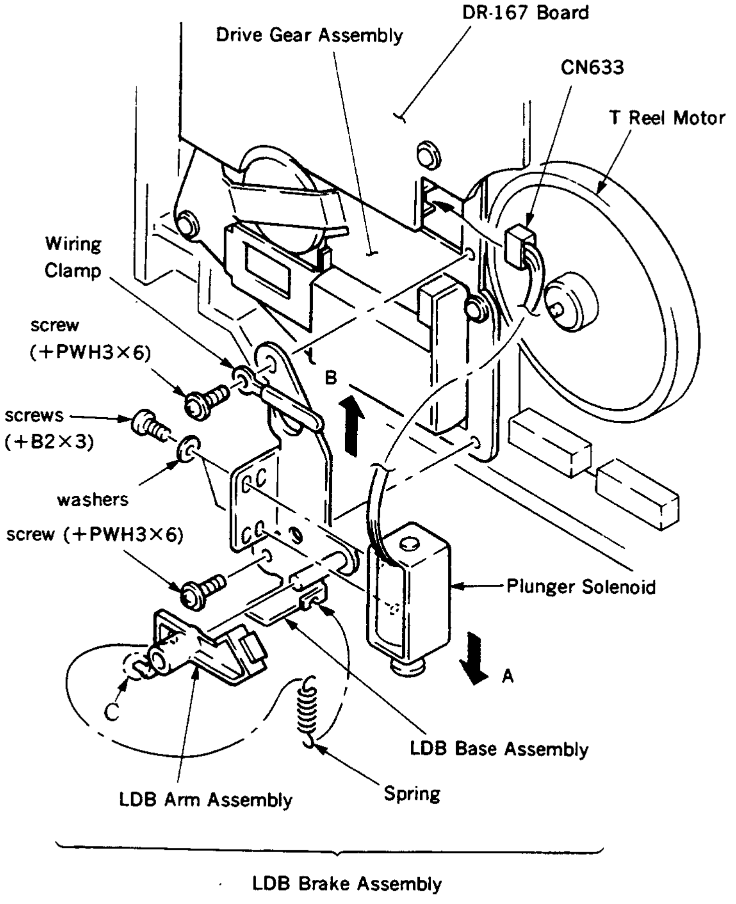
4-32. LDB BRAKE ASS'Y REPLACEMENT

Tool :
MOLYKOTE grease EM-30LG (J-6090-014-A)
or MOLYKOTE grease EM-30L : DOW CORNING Corp.

(1) Disconnect connector CN633 from the DR-167 board.
(2) Remove two screws and the wiring clamp, then remove the LDB brake ass'y.
(3) Remove two screws and the two washers, then remove the plunger solenoid from the LDB base ass'y.
(4) Remove the spring, then pull out the LDB arm ass'y from the LDB base ass'y.

Precautions for installation

①When installing the plunger solenoid on the LDB base ass'y first temporarily install it with the two screws and two washers, then move it fully in the direction of arrow A and tighten the screws hard.
②When installing the LDB brake ass'y on the drive gear ass'y, temporarily install it with the two screws and the wiring clamp, then move it fvlly in the direction of arrow B and tighten the screws hard.
③Fix the harness of the plunger solenoid with the wiring clamp in such a way that it does not touch the T reel motor.
④Apply a dab of MOLYKOTE grease to part C shown in the drawing after replacing the LDB arm ass'y with a new one.


DR-167 Board
Drive Gear Assembly
CN633
T Reel Motor
Wiring Clamp
screw (+PWH3×6)
B
screws (+B2×3)
washers
screw (+PWH3×6)
Plunger Solenoid
A
C
LDB Base Assembly
LDB Arm Assembly
Spring
LDB Brake Assembly

SECTION 5
TORQUE AND TAPE TENSION ALIGNMENTS

5-1. S/T REEL TABLE TORQUE ADJUSTMENT

Tools :
Torque gauge (H-7099-039-H)
Torque gauge adapter (H-7099-035-H)
Shorting clip

Adjustment Procedure :

(1) Remove the cassette compartment according to sub-section 2-2.
(2) Set No.1 and No.8 switches of DIP switch S101/SS board (H-9) to ON. (Fig. 1)
(3) Short TP304 (D-9) and E5 (C-9) on the SS board with a shorting clip. (Fig. 1)
(4) Press the cassette down switch with the finger, and while keeping it depressed, turn the POWER switch ON. (Fig. 2)
(5) Put the VTR in the PLAY mode.

S side reel table adjustment

(6) Stop the S side reel table with the hand, and install the torque meter. (Fig. 3)
(7) Adjust RV303/SS board (C-9) so that the value on the torque meter meet the required specification.

T side reel table adjustment

(8) Stop the T side reel table with the hand, and install the torque meter. (Fig. 3)
(9) Adjust RV304/SS board (C-9) so that the value on the torque meter meet the required specification.
(10) Upon completion of adjustments, remove the shorting clip.
(11) Set No.1 and No.8 switches of S101 to OFF.

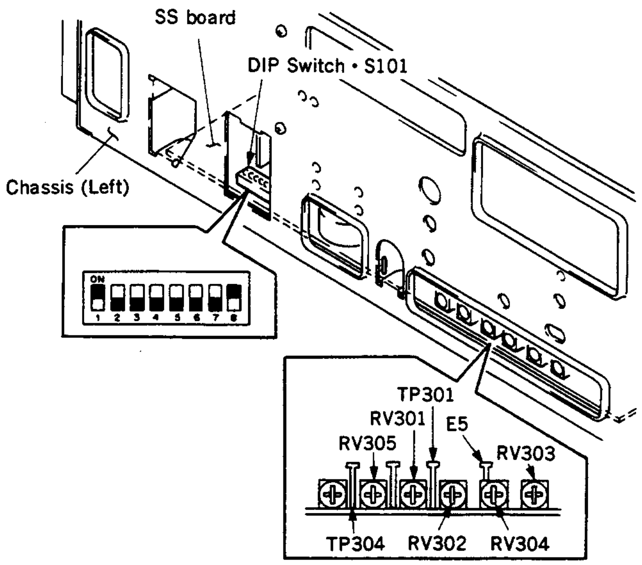

SS board
DIP Switch • S101
Chassis (Left)
ON
1 2 3 4 5 6 7 8
TP301
RV301
E5
RV305
RV303
TP304
RV302
RV304

Fig. 1

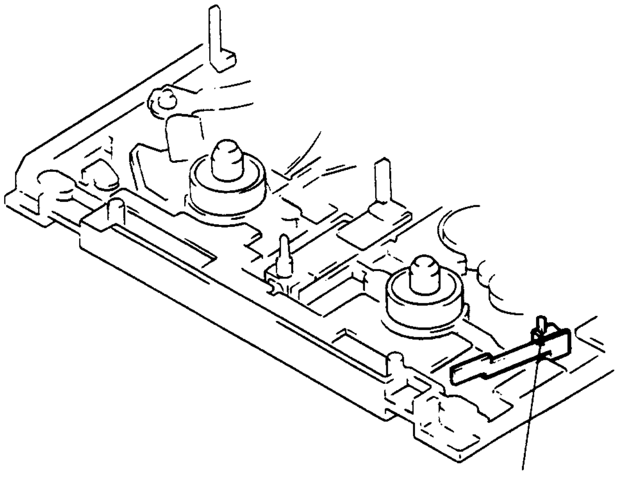

Cassette Down Switch

Fig. 2

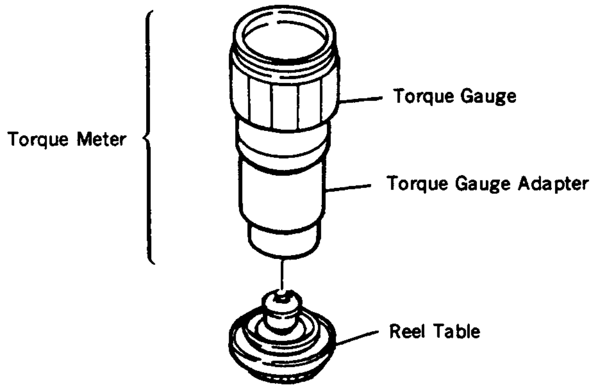

Torque Meter
Torque Gauge
Torque Gauge Adapter
Reel Table

Fig. 3

Spec. :
S/T Side $[147\pm5]\times10^{-4}$ N•m (150±5 g•cm)

5-2. TAPE TENSION ADJUSTMENT

Be sure to perform this adjustment after replacing a part of the tape run system, such as the drum or tension regulator. Also, be sure to check the tape tension when performing a periodic check.

Tools :

Tentelometer (T2-H7-UMC)
S-VHS cassette tape (T-120)

Adjustment Procedure :

(1) To prevent the tape from touching the tentelometer, rotate the tape stabilizer in the direction of the arrow until it strikes the chassis (left), then insert the bamboo skewer, or the like, at point "a" shown in the figure, and fix it in place. (Fig. 1)
(2) Insert a cassette tape (T-120) in the VTR, then put the VTR into the PLAY mode.
(3) Install the tentelometer between the TG-3 guide and the TG-5 guide. (Fig. 1)
(4) Adjust RV301/SS board (D-9) so that the value on the tentelometer meet the required specification 1.
(5) Enter the SEARCH REV mode.
(6) Adjust RV302/SS board (C-9) so that the value on the tentelometer meet the required specification 2.
(7) Enter the PAUSE mode.
(8) Adjust RV305/SS board (D-9) so that the value on the tentelometer meet the required specification 3.
(9) Confirm that each of the tape tensions meet the required specification 1 and 3.
During PLAY mode, tape tension required as Spec. 1, and PAUSE mode, tape tension required as Spec. 3.
(10) Confirm that each of the tape tensions meet the required specification 2 and 3.
During SEARCH REV mode, tape tension required as Spec. 2, and PAUSE mode, tape tension required as Spec. 3.
(11) Remove the tentelometer and bamboo skewer, then press the EJECT button and remove the cassette tape.

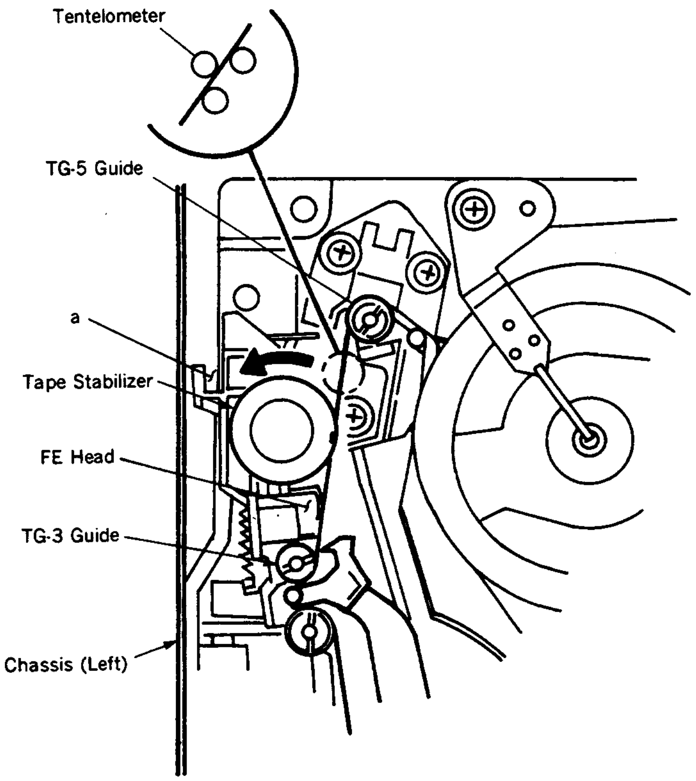


Fig. 1

Spec. 1 : Tape tension in the PLAY mode
$[245\pm25]\times10^{-3}$ N (25 ± 2.5 g)

Spec. 2 : Tape tension in the SEARCH REV mode
$[392\pm25]\times10^{-3}$ N (40 ± 2.5 g)

Spec. 3 : Tape tension in the PAUSE mode
$[216\pm20]\times10^{-3}$ N (22 ± 2 g)

SECTION 6
TAPE RUN ALIGNMENTS

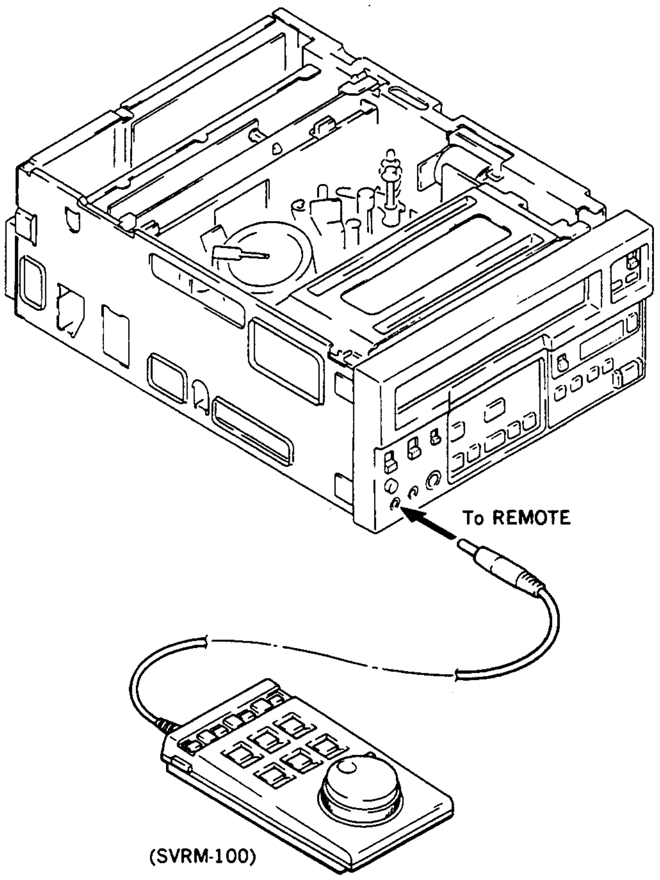
The tape run system has been adjusted before leaving the factory. If a part in the transport is replaced, therefore, the new part should be adjusted carefully to ensure that the tape transport is stable.
This section covers the entire adjustment procedure from coarse adjustment to fine adjustment.
Before commencing adjustment, remove the top panel and the U case of the VTR.

[Adjustment preparations]

1) Remote controller

Obtain remote controller RM-V100, RM-V200, or SVRM-100 to operate the VTR.
(When remote controller is not available, use function buttons of VTR.)

Connecting the remote controller

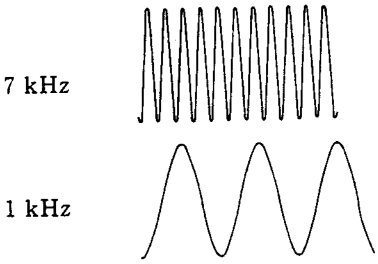


SVRM-100, RM-V100, or RM-V200

2) **Equipment and tool**

- Oscilloscope
- Tentelometer, T2-H7-UMC
- Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
- Small adjustment mirror (J-6080-840-A)
- X value adjustment tool (J-6380-710-A)
- X value adjustment tool connecting cable (See sub-section 6-9) (Must be provided by the service side.)
- RP extension tool (J-6381-370-A)
- S-VHS cassette tapes, T-160 and T-120
- Alignment tape, JVC-MH-2 (H-7099-052-H)
- Alignment tape, KRV-4821PSA (8-192-602-48)
- Alignment tape, KRV-45HPS (Pending)

Signals recorded on the alignment tape

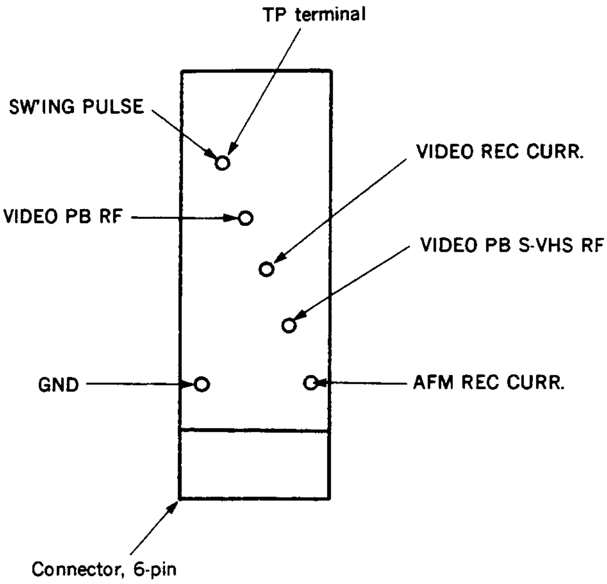
Name (Part No.)	Recording mode	Signals recorded on the tape	
		Video area	Audio area
JVC-MH-2 (H-7099-052-H)	SP	• Stairstep 10 min • No signal 5 min • Color bars 10 min • RF sweep 3 min Markers: 2.0 MHz 4.0 MHz 5.0 MHz	• 7 kHz 10 min • 3 kHz 5 min • 1 kHz (0 dB) 10 min • No signal 3 min
KRV-4821PSA (8-192-602-48)	SP	• 1 MHz (CH-1 only) • 1 V blanking every 60 V } 120 min	• 7 kHz 120 min • 1 kHz 120 min } MIX 
KRV-45HPS (S-VHS) (Pending)	SP	• Color bars 170 min	• Normal audio 7 kHz 15 s, 400 Hz 15 s (alternatery) • Hi-Fi audio 400 Hz (stereo)

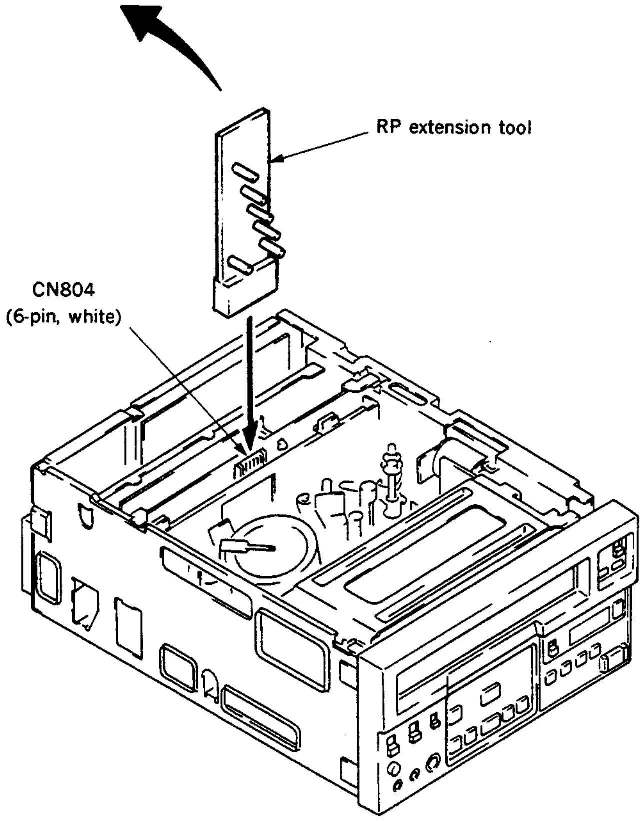
RP extension tool

This extension tool is used to take off the signal output from the check connector CN804 on the RP board so as to enable it to be connected easily to a probe.
It is intended to be inserted into connector CN804.

CN804 output signal

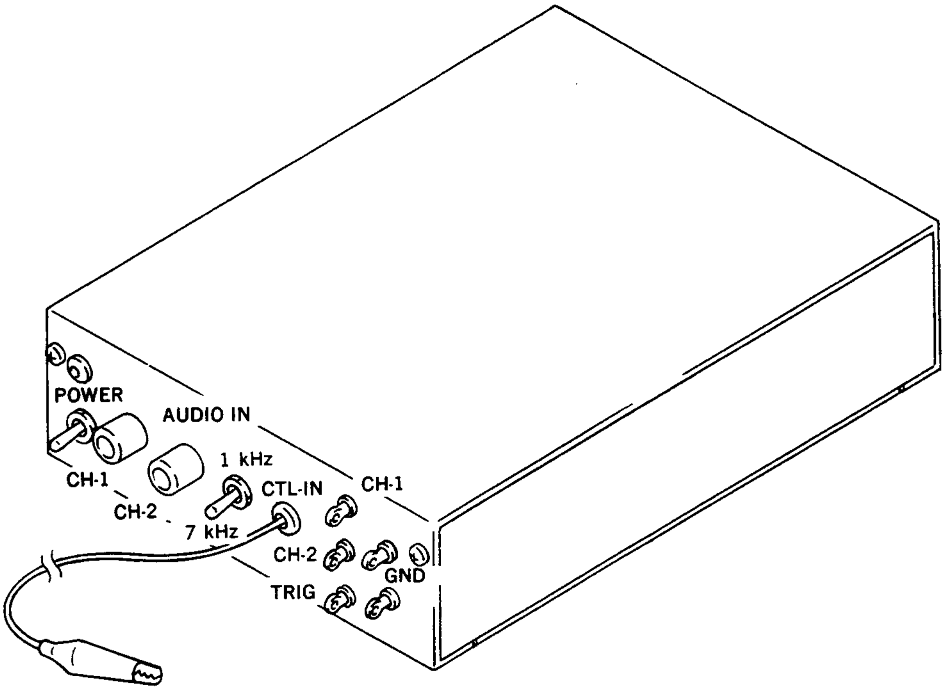
Pin No.	Output Signal
1	AFM REC CURRENT
2	S-VHS • VIDEO PB RF OUT
3	VIDEO REC CURRENT
4	VHS • VIDEO PB RF OUT
5	RF SWITCHING PULSE
6	GND


TP terminal
SW'ING PULSE
VIDEO REC CURR.
VIDEO PB RF
VIDEO PB S-VHS RF
GND
AFM REC CURR.
Connector, 6-pin


RP extension tool
CN804
(6-pin, white)

X value adjustment tool

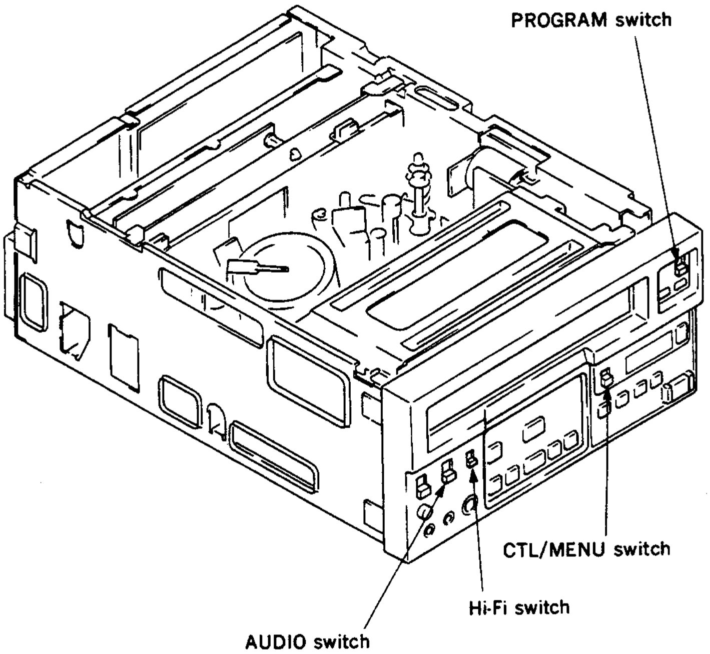
This tool is used when adjusting the height of the audio head, the azimuth, zenith, head-to-tape contact and the X value (position of audio head).
Power is supplied from two internal dry batteries (9 V).
When replacing the dry batteries, remove four screws at the bottom, and open the bottom plate of the tool.
Note:
The batteries will run down quickly if the POWER switch of the tool is left switched ON.


POWER
AUDIO IN
CH-1
CH-2
1 kHz
7 kHz
CTL-IN
CH-1
CH-2
GND
TRIG

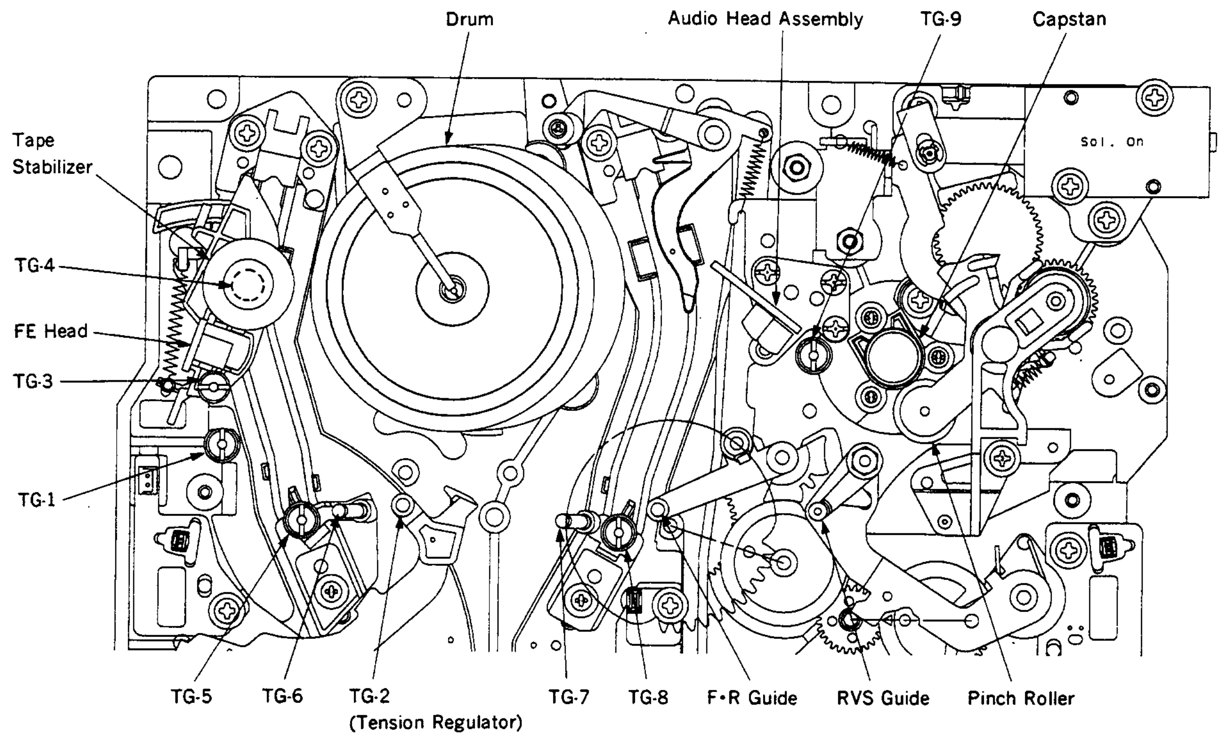
X value adjustment tool

3) **Switch setting**
Set the switches of the frontpanel as follow.

Select Switch	Setting Position
PROGRAM	OFF
CTL/MENU	CTL
Hi-Fi	OFF
AUDIO	NORM

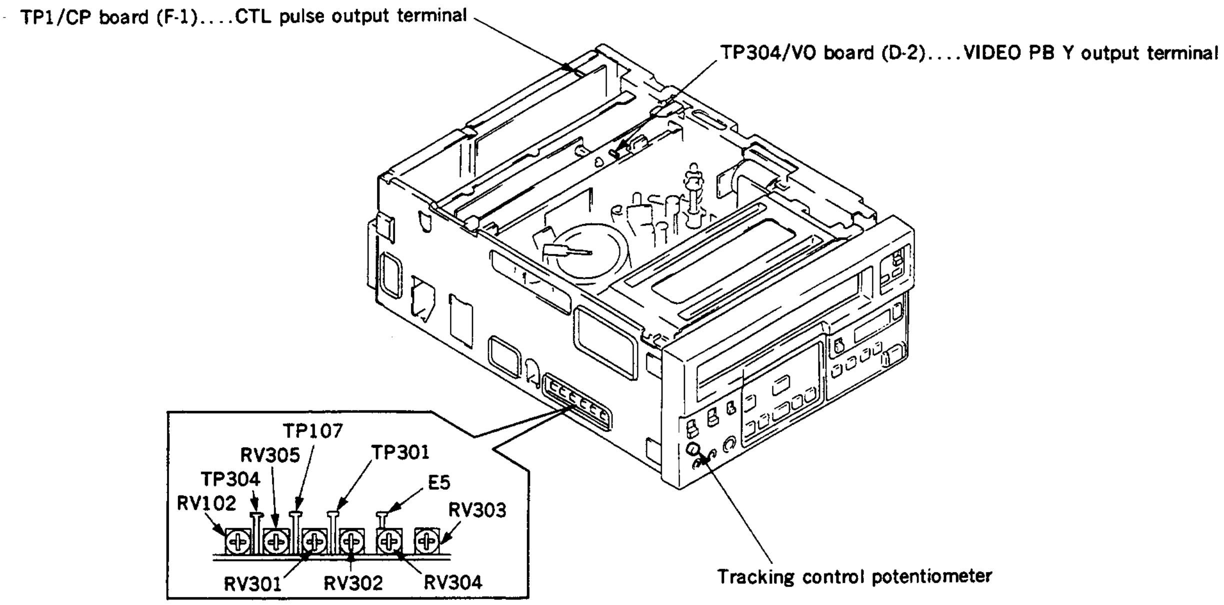

PROGRAM switch
CTL/MENU switch
Hi-Fi switch
AUDIO switch

[**Tape guide layout drawing**]


Drum
Audio Head Assembly
TG-9
Capstan
Tape Stabilizer
TG-4
FE Head
TG-3
TG-1
Sol. on
TG-5
TG-6
TG-2
(Tension Regulator)
TG-7
TG-8
F•R Guide
RVS Guide
Pinch Roller

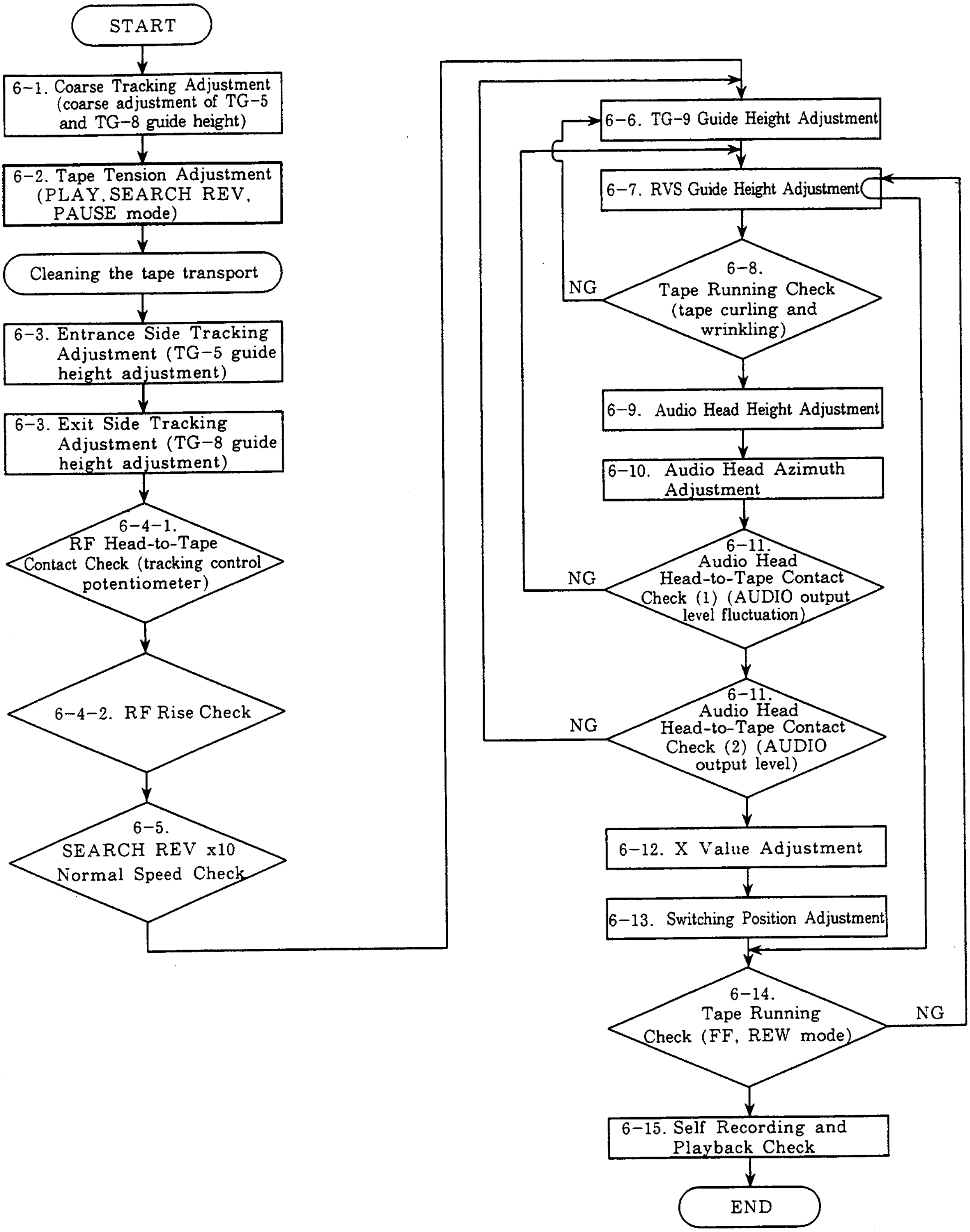
[**Position of potentiometers and TP terminals**]

The positions of the adjustment potentiometers and TP terminals are shown in the figure below.
(The figure below shows the VTR with the top panel and U case removed.)


TP1/CP board (F-1)....CTL pulse output terminal
TP304/VO board (D-2)....VIDEO PB Y output terminal
TP107
RV305
TP301
TP304
E5
RV102
RV303
RV301
RV302
RV304
Tracking control potentiometer

- RV301....PLAY mode tape tension adjustment potentiometer
- RV302....Search REV mode tape tension adjustment potentiometer
- RV305....PAUSE mode tape tension adjustment potentiometer
- RV102....Switching position adjustment potentimeter

[**Adjustment Flow Chart**]


START
6-1. Coarse Tracking Adjustment (coarse adjustment of TG-5 and TG-8 guide height)
6-2. Tape Tension Adjustment (PLAY, SEARCH REV, PAUSE mode)
Cleaning the tape transport
6-3. Entrance Side Tracking Adjustment (TG-5 guide height adjustment)
6-3. Exit Side Tracking Adjustment (TG-8 guide height adjustment)
6-4-1. RF Head-to-Tape Contact Check (tracking control potentiometer)
6-4-2. RF Rise Check
6-5. SEARCH REV x10 Normal Speed Check
6-6. TG-9 Guide Height Adjustment
6-7. RVS Guide Height Adjustment
NG
6-8. Tape Running Check (tape curling and wrinkling)
6-9. Audio Head Height Adjustment
6-10. Audio Head Azimuth Adjustment
NG
6-11. Audio Head Head-to-Tape Contact Check (1) (AUDIO output level fluctuation)
NG
6-11. Audio Head Head-to-Tape Contact Check (2) (AUDIO output level)
6-12. X Value Adjustment
6-13. Switching Position Adjustment
6-14. Tape Running Check (FF, REW mode)
NG
6-15. Self Recording and Playback Check
END

6-1. COARSE TRACKING ADJUSTMENT

Tools:

Oscilloscope
RP extension tool (J-6381-370-A)
Alignment tape (KRV-4821PSA)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)

Adjustment Procedure:

(1) Connect the oscilloscope as follows.
    CH-1: VIDEO PB RF terminal/RP extension tool
    TRIG: SW'ING PULSE terminal/RP extension tool
    GND: GND terminal/RP extension tool
(2) Playback the alignment tape.
(3) Turn the tracking control potentiometer on the front panel until the center part of the RF waveform is maximum. (Fig. 2)
(4) Turn the upper flange of the TG-5 guide until the RF waveform at the entrance side is virtually flat. (Fig. 3)
(5) Turn the upper flange of the TG-8 guide until the RF waveform at the exit side is virtually flat. (Fig. 4)
(6) Turn the tracking control potentiometer until the center part of the RF waveform is maximum.
(7) Press the EJECT button, and remove the alignment tape.

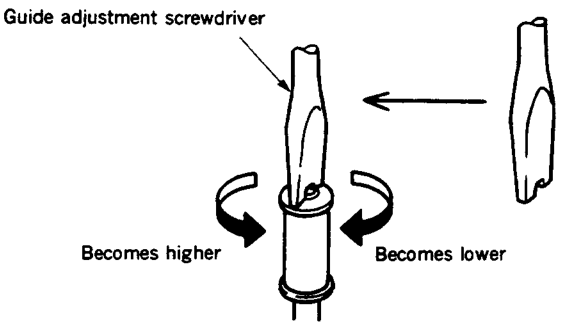

Guide adjustment screwdriver
Becomes higher
Becomes lower

Fig. 1 Tape Guide Height Adjustment Method.

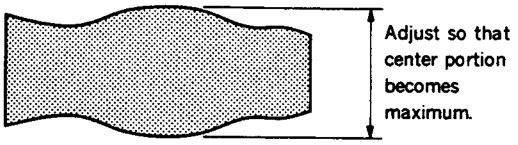

Adjust so that center portion becomes maximum.

Fig. 2

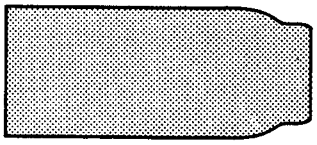


Fig. 3

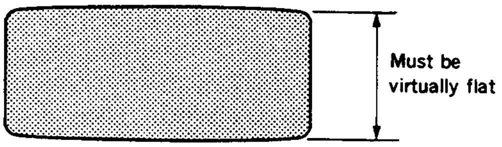

Must be virtually flat

Fig. 4

6-2. TAPE TENSION ADJUSTMENT

Tools :
Tentelometer (T2-H7-UMC)
S-VHS cassette tape (T-120)

Adjustment Procedure :

(1) To prevent the tape from touching the tentelometer, rotate the tape stabilizer in the direction of the arrow until it strikes the chassis (left), then insert the bamboo skewer, or the like, at point "a" shown in the figure, and fix it in place. (Fig. 1)
(2) Insert a cassette tape (T-120) in the VTR, then put the VTR into the PLAY mode.
(3) Install the tentelometer between the TG-3 guide and the TG-5 guide. (Fig. 1)
(4) Adjust RV301/SS board (D-9) so that the value on the tentelometer meet the required specification 1.
(5) Enter the SEARCH REV mode.
(6) Adjust RV302/SS board (D-9) so that the value on the tentelometer meet the required specification 2.
(7) Enter the PAUSE mode.
(8) Adjust RV305/SS board (D-9) so that the value on the tentelometer meet the required specification 3.
(9) Confirm that each of the tape tensions meet the required specification 1 and 3. During PLAY mode, tape tension required as Spec. 1, and PAUSE mode, tape tension required as Spec. 3.
(10) Confirm that each of the tape tensions meet the required specifications 2 and 3. During SEARCH REV mode, tape tension required as Spec. 2, and PAUSE mode, tape tension required as Spec. 3.
(11) Remove the tentelometer and bamboo skewer, then press the EJECT button and remove the cassette tape.

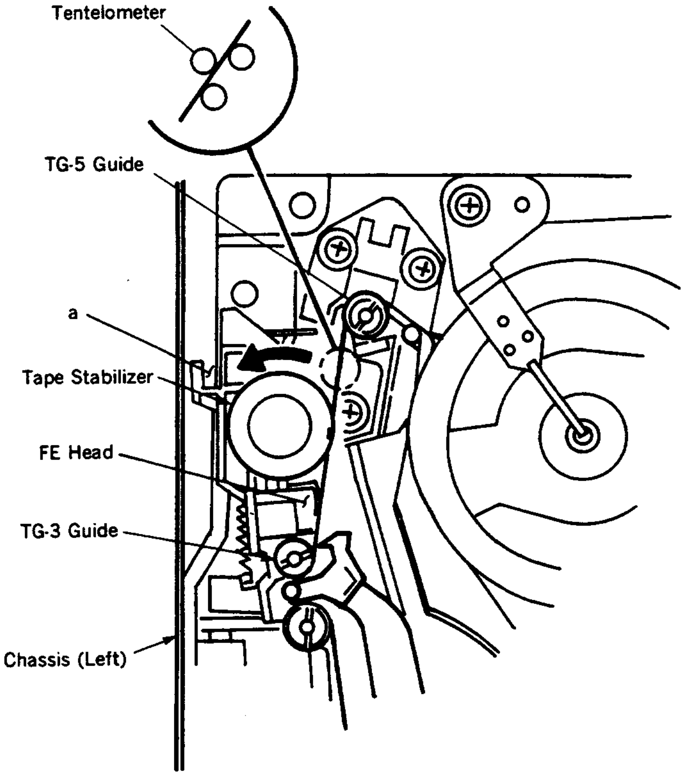


Fig. 1

Spec. 1 : Tape tension in the PLAY mode
[245±25]×10⁻³ N (25±2.5 g)

Spec. 2 : Tape tension in the SEARCH REV mode
[392±25]×10⁻³ N (40±2.5 g)

Spec. 3 : Tape tension in the PAUSE mode
[216±20]×10⁻³ N (22±2 g)

6-3. TRACKING ADJUSTMENT

Tools:
Oscilloscope
RP extension tool (J-6381-370-A)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Alignment tape (KRV-4821PSA)

Cleaning prior to adjustment:
Clean the following parts with a cleaning piece moistened with cleaning fluid.

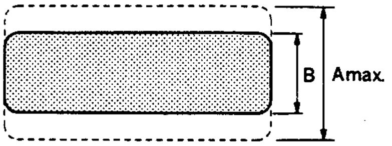
- TG-1 to TG-9, RVS and F • R tape guides
- Audio head, FE head, capstan, pinch roller
- Rotary head, tape run face of upper and lower drums

[Note: Method of cleaning the rotary head]
Press the cleaning piece gently against the rotary head, then rotate the upper drum slowly in the counterclockwise direction with the fingers to clean the head.

Adjustment Procedure:
(1) Connect the oscilloscope as follows.
CH-1: VIDEO PB RF terminal/RP extension tool
TRIG: SW'ING PULSE terminal/RP extension tool
GND: GND terminal/RP extension tool
(2) Playback the alignment tape.

Entrance side adjustment:
(3) Turn the tracking control potentiometer on the front panel until the RF waveform is 70 to 80% of maximum. (Fig. 1)
(4) Turn the upper flange of the TG-5 guide clockwise until the RF waveform at the left hand side is as shown in Fig. 2.
(5) Turn the upper flange on the TG-5 guide in the counterclockwise direction until the RF waveform at the left hand side is flat. (Fig. 3)
Note:
- Complete the height adjustment of TG-5 with the guide turned counterclockwise.

(6) Turn the tracking control potentiometer on the front panel counterclockwise until the RF waveform is 70 to 80% of maximum, then confirm that the RF waveform at the left hand side is virtually flat. (Fig. 4)



$\frac{B}{Amax.}$ =0.7 to 0.8

Fig. 1

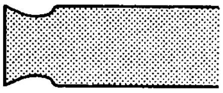


Fig. 2

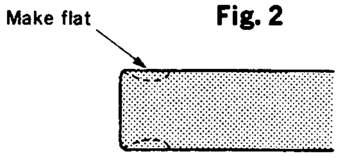
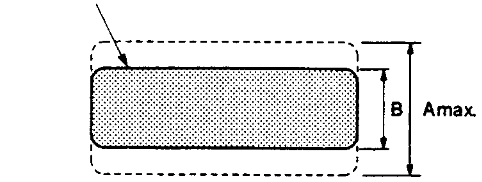


Fig. 3



Spec.:
RF waveform at entrance side must be virtually flat when $\frac{B}{Amax.}$ =0.7 to 0.8.

Fig. 4

Exit side adjustment :

(7) Turn the tracking control potentiometer on the front panel until the RF waveform is 70 to 80% of maximum. (Fig. 1)

(8) Turn the upper flange of the TG-8 guide clockwise until the RF waveform on the right hand side is as shown in Fig. 5.

(9) Turn the upper flange of the TG-8 guide counterclockwise until the RF waveform on the right hand side is Fig. 6.

Note :

- Complete the height adjustment of TG-8 with the guide turned counterclockwise.

(10) Confirm that the RF waveform on the right hand side is Fig. 6 when the mode is switched from STOP to PLAY.

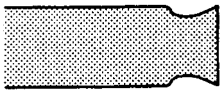
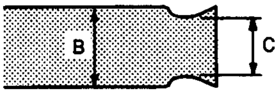


Fig. 5



$\frac{C}{B}$=0.85 to 0.95

Fig. 6

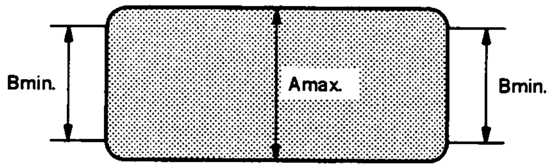
6-4. CHECKING AFTER TRACKING ADJUSTMENT

Tools:
Oscilloscope
RP extension tool (J-6381-370-A)
Alignment tape (KRV-4821PSA)

- Connect the oscilloscope as follows.
  CH-1: VIDEO PB RF terminal/RP extension tool
  TRIG: SW'ING PULSE terminal/RP extension tool
  GND: GND terminal/RP extension tool

6-4-1. RF Head-to-Tape Contact Check

(1) Playback the alignment tape.
(2) Turn the tracking control potentiometer on the front panel until the center of the RF waveform is maximum.
(3) Confirm that the RF waveform meet the specification.



Spec.:
$\frac{\text{Bmin.}}{\text{Amax.}} \geq 0.8$

6-4-2. RF Rise Check

(1) Playback the alignment tape.
(2) Turn the tracking control potentiometer on the front panel until the center of the RF waveform becomes maximum.
(3) Put the VTR in each of the following modes in turn, and confirm that the rise time of the RF waveform meet the specification. (Fig. 1)
① SEARCH REV → PLAY
② SEARCH FWD → PLAY
③ STOP → PLAY
(4) Enter the SEARCH REV mode, and confirm that there is no missing of the RF waveform at the entrance side. (Fig. 2)

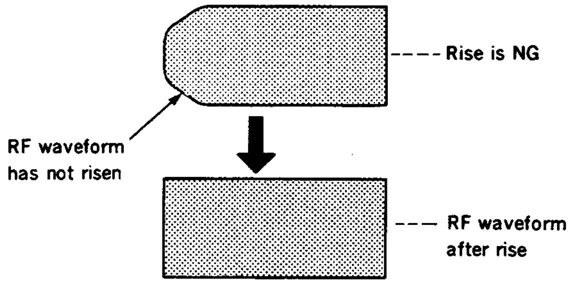


Fig. 1

Spec.:	RF rise time
① SEARCH REV → PLAY	Within 3 s
② SEARCH FWD → PLAY	Within 3 s
③ STOP → PLAY	Within 3 s

• The rise time is the time from when the RF waveform appears on the oscilloscope.

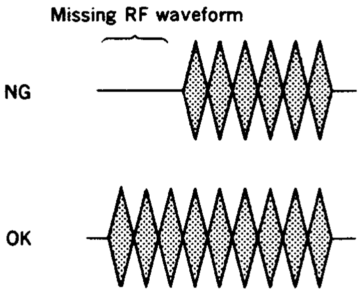


Fig. 2

6-5. SEARCH REV x10 NORMAL SPEED CHECK

Tools :

Oscilloscope
Alignment tape (KRV-45HPS)
RP extension tool (J-6381-370-A)
Remote controller (SVRM-100, RM-V100, or RM-V200)

Checking Procedure :

(1) Connect the oscilloscope as follows.
 CH-1 : VIDEO PB S-VHS RF terminal/RP extension tool
 TRIG : SW'ING PULSE terminal/RP extension tool
 GND : GND terminal/RP extension tool
(2) Load the alignment tape in the VTR.
(3) Using the remote controller, enter the SEARCH REV mode (x10 times normal speed), and play back the color bars that were recorded in the SP mode.
(4) Confirm that an RF waveform appears at SP1, SP2, EP1 and EP2. (Fig. 1) Also, confirm that an RF waveform appears at the entrance side. (Fig. 2) (Fig. 3)

If there is not appear the RF waveform.

Check the following points.

①Does the tape curl or become wrikled between the TG-5 guide, drum and the TG-8 guide?
 If curling or wrinkling occurs → re-adjust the height of the TG-5 and TG-8 guides.
②Check the circuit between pin 23 of IC201 (D-2) and pin 2 of CN804 on the RP board.
③Confirm that the voltage input to pin 28 of IC201 on the RP board is between 2.15 and 2.7 V dc.

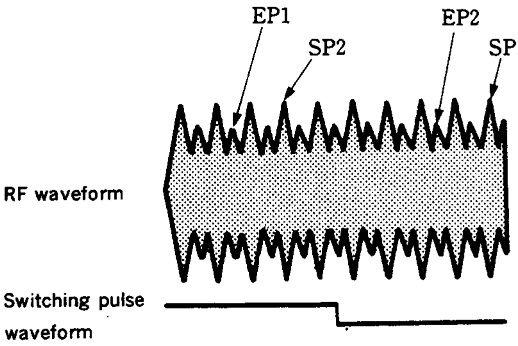

EP1
SP2
EP2
SP1
RF waveform
Switching pulse waveform

Fig. 1

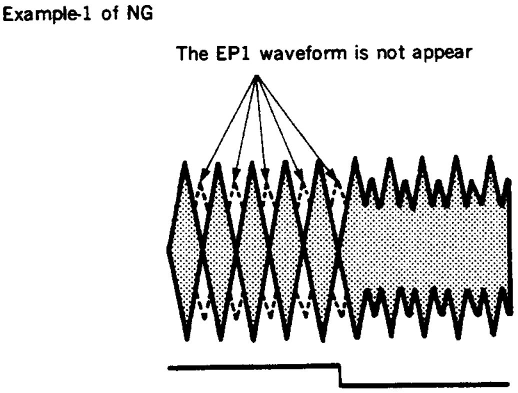

Example-1 of NG
The EP1 waveform is not appear

Fig. 2

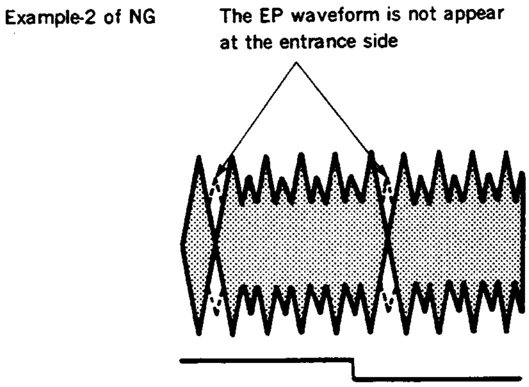

Example-2 of NG
The EP waveform is not appear at the entrance side

Fig. 3

6-6. TG-9 GUIDE HEIGHT ADJUSTMENT

Tools :

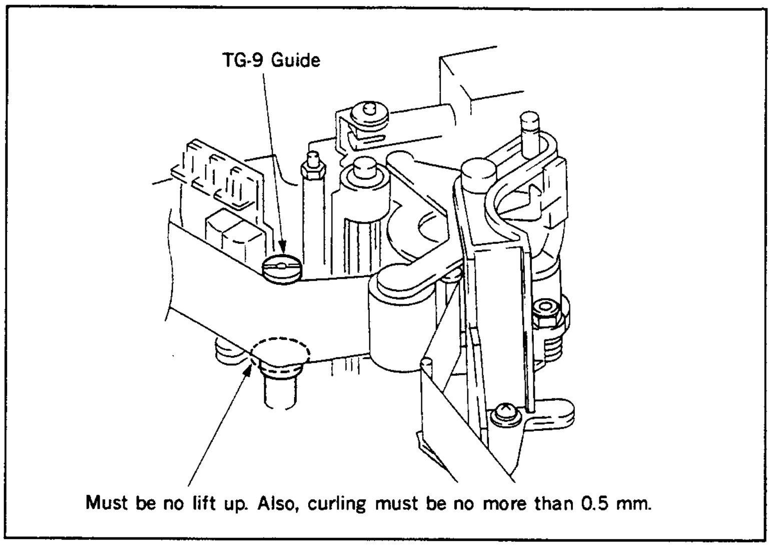
S-VHS cassette tape (T-160)

Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)

Adjustment Procedure :

(1) Insert a cassette tape (T-160) in the VTR, then put the VTR in the PLAY mode.

(2) Turn the upper flange of the TG-9 guide, and pass the tape along the lower flange.


TG-9 Guide
Must be no lift up. Also, curling must be no more than 0.5 mm.

6-7. RVS GUIDE HEIGHT ADJUSTMENT

Tools :

S-VHS cassette tape (T-160)

Box screwdriver (width 5.5 mm)

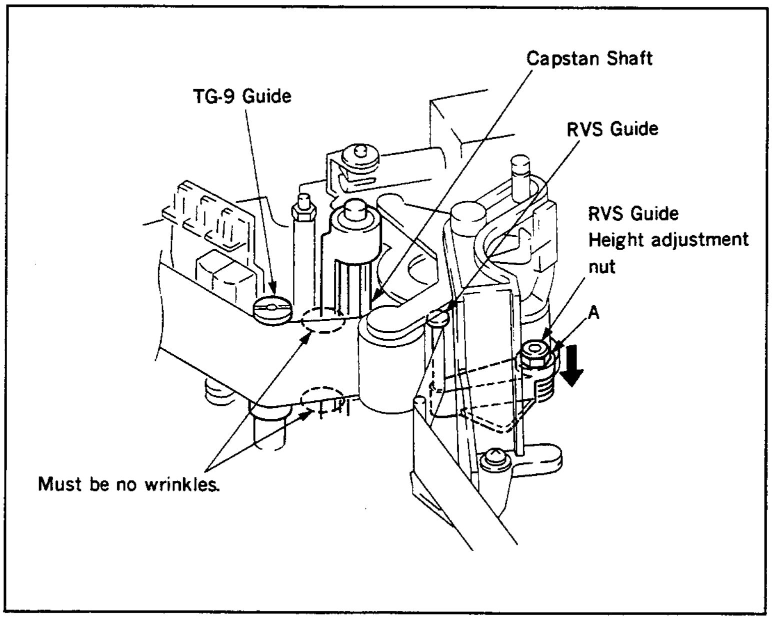
Adjustment Procedure :

(1) Enter the Search REV mode using the first 10 minutes or less of the tape.

(2) Turn the RVS guide height adjustment nut until wrinkling of the tape between the TG-9 guide and the capstan shaft that occurs when the VTR is switched from the search REV mode to the search FWD mode, or vice-versa, disappears in less than 3 seconds.

Direction of adjustment of RVS guide height adjustment nut

If the wrinkling of the tape decreases when part A indicated in the figure (bottom of adjustment nut) is pressed in the direction of the arrow, turn the RVS guide height adjustment nut clockwise. If the wrinkling increases, turn the nut counterclockwise.


Capstan Shaft
TG-9 Guide
RVS Guide
RVS Guide
Height adjustment
nut
A
Must be no wrinkles.

6-8. TAPE RUNNING CHECK (check to be performed subsequent to adjustments of sections 6-1 to 6-7)

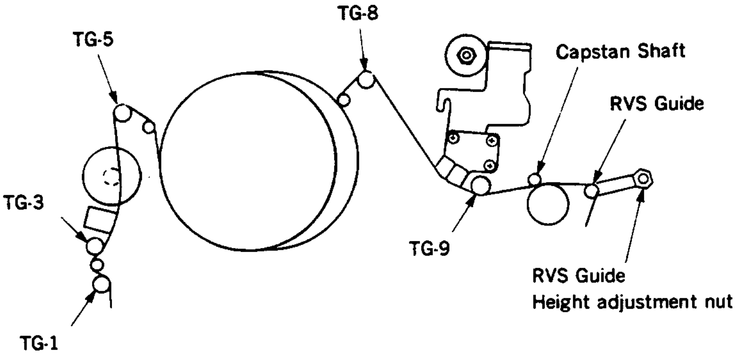
Tool :
S-VHS cassette tape (T-160)

Checking Procedure :

(1) Insert a cassette tape (T-160) in the VTR.
(2) Confirm that the curling of the tape at the TG-1, TG-3, TG-5, TG-8 and TG-9 guides in both the Search FWD and SEARCH REV modes meet the specification.

If the specification is not satisfied :

(3) Re-adjust the TG-9 and RVS guides height according to sub-sections 6-6 and 6-7.
(4) Check step (2).


TG-5
TG-8
Capstan Shaft
RVS Guide
TG-3
TG-9
RVS Guide
Height adjustment nut
TG-1

Spec. :
TG-1, TG-3, TG-5, TG-8, TG-9 Guides ...... Tape curling must be within 1 mm.

6-9. AUDIO HEAD HEIGHT ADJUSTMENT

Tools:

Oscilloscope
X value adjustment tool (J-6380-710-A)
Alignment tape (KRV-4821PSA or JVC-MH-2)
Box screwdriver (width 5.5 mm)
Connecting cables (two) (to be provided by the service side)....Fig. 1

Connecting the tool:

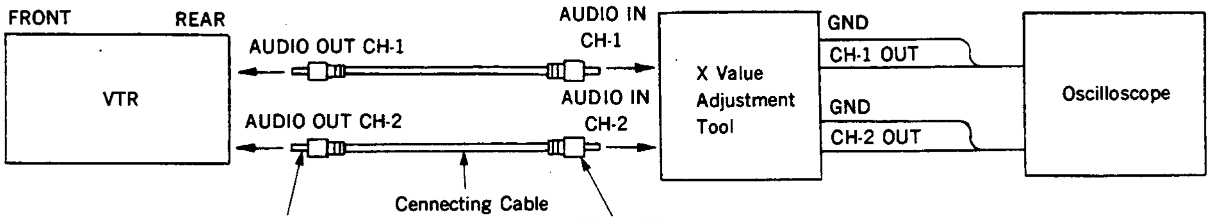

FRONT
REAR
VTR
AUDIO OUT CH-1
AUDIO OUT CH-2
AUDIO IN CH-1
AUDIO IN CH-2
X Value Adjustment Tool
GND
CH-1 OUT
GND
CH-2 OUT
Oscilloscope
Phono Plug
Cennecting Cable
Phono Plug

Fig. 1

Adjustment Procedure:

(1) Set the switch on the X value adjustment tool to the 1 kHz side.
(2) Turn the POWER switch of the X value adjustment tool ON.
(3) Playback the alignment tape (KRV-4821PSA). (When using JVC-MH-2 tape, playback the 1 kHz part.)
(4) Turn the audio head height adjustment nut until the level of both CH-1 and CH-2 is maximum. (Fig. 2, Fig. 3)

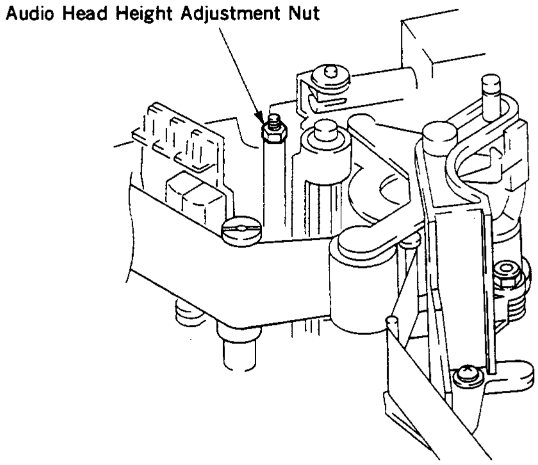

Audio Head Height Adjustment Nut

Fig. 2

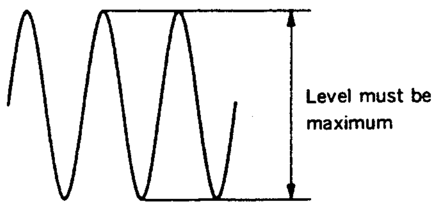

Level must be maximum

Fig. 3

6-10. AUDIO HEAD AZIMUTH ADJUSTMENT

Tools :
Oscilloscope
X value adjustment tool (J-6380-710-A)
Alignment tape (KRV-4821PSA or JVC-MH-2)
Connecting cables (two) (See sub-section 6-9.)

Connecting the tool : Same as sub-section 6-9

Adjustment Procedure :

(1) Set the switch on the X value adjustment tool to the 7 kHz side.

(2) Playback the alignment tape (KRV-4821PSA). (When using JVC-MH-2 tape, playback the 7 kHz part.)

Output level adjustment

(3) Turn the azimuth adjustment screw until the resurge waveform on the oscilloscope meet the specification 1. (Fig. 1 and Fig. 2)

Azimuth adjustment

(4) Turn the azimuth adjustment screw until the resurge waveform on the oscilloscope meet the specification 2. (Fig. 2)

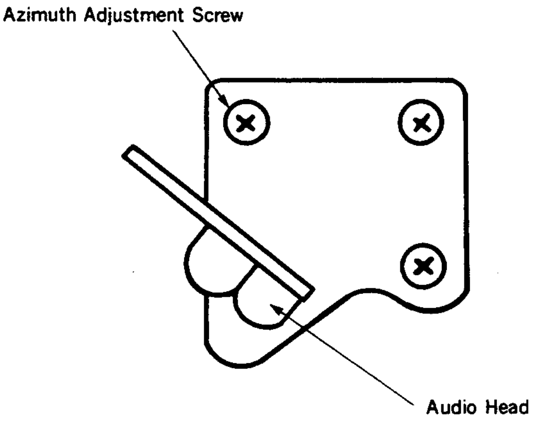


Fig. 1

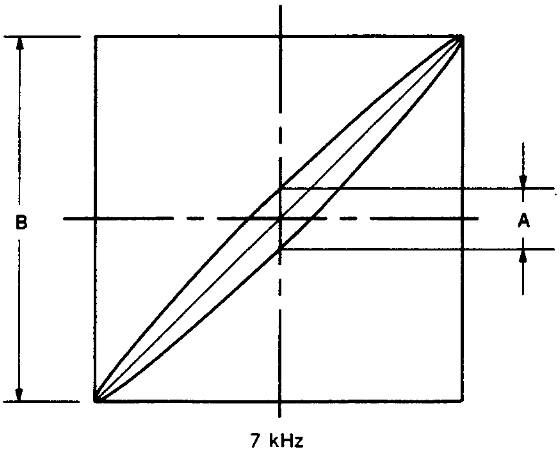


Fig. 2

Spec. 1 :
B must be the maximum level.

Spec. 2 :
A must be no more than 1 cm when level B is 6 cm.

6-11. AUDIO HEAD HEAD-TO-TAPE CONTACT CHECK

Tools:
Oscilloscope
X value adjustment tool (J-6380-710-A)
Alignment tape (KRV-4821PSA or JVC-MH-2)
Connecting cables (two) (See sub-section 6-9.)

Connecting the tool: Same as sub-section 6-9

Checking Procedure:

(1) Set the switch on the X value adjustment tool to the 7 kHz side.
(2) Playback the alignment tape (KRV-4821PSA). (When using JVC-MH-2 tape, playback the 7 kHz part.)

Level fluctuation check

(3) Confirm that the level fluctuation of both CH-1 and CH-2 meet the specification. (Fig. 1)

If the specification is not satisfied:

(4) Turn the TG-9 guide counterclockwise until the specification is satisfied. (Fig. 2) (Tape curling must be no more than 0.5 mm.)
(5) Return to sub-section 6-7 and repeat adjustment up to sub-section 6-10.
(6) Check step (4).

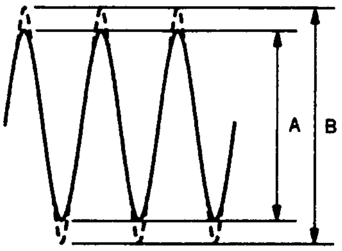
Output level check

(7) Press the top of the tape (AUDIO track part) as indicated by the arrow gently with the tip of the finger, and confirm that the increase in level conforms to the specification for both CH-1 and CH-2. (Fig. 2 and Fig. 3)

If the specification is not satisfied:

(8) Turn the zenith adjustment screw of the audio head 90° clockwise.
(9) Return to sub-section 6-6 and repeat adjustment up to sub-section 6-10.
(10) Check steps (3) and (7).

Level Fluctuation



Spec.: A≧0.9B

Fig. 1

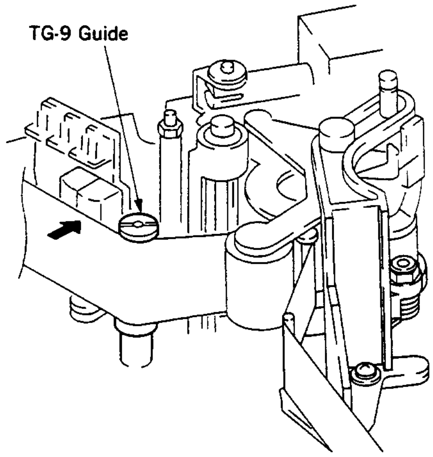
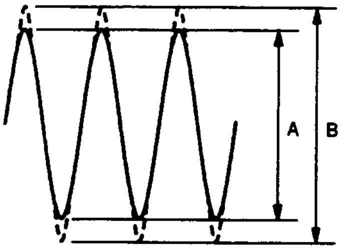


Fig. 2

Output Level



Spec.: B≦1.2A

A: Initial level
B: Level when the tape is pressed with the finger.

Fig. 3

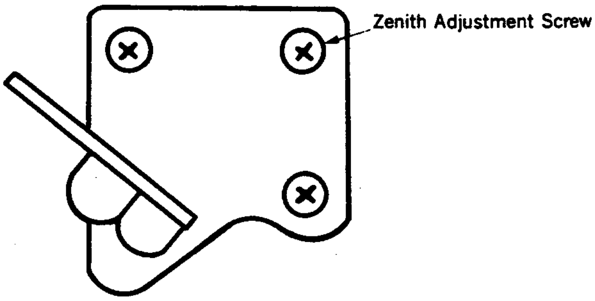


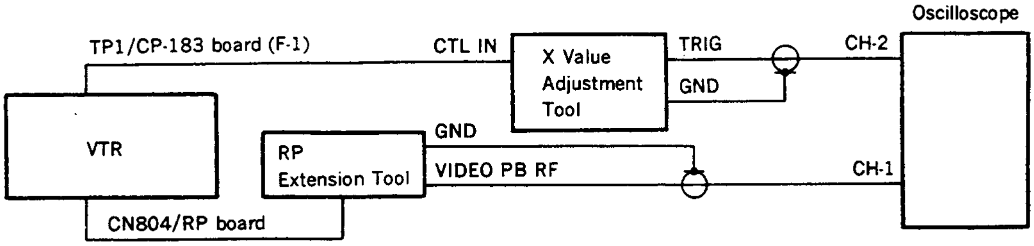
Fig. 4

6-12. X VALUE ADJUSTMENT (AUDIO HEAD POSITION ADJUSTMENT)

Tools :

Oscilloscope
X value adjustment tool (J-6380-710-A)
RP extension tool (J-6381-370-A)
Alignment tape (KRV-4821PSA)
Box screwdriver (width 5.5 mm)
Connecting cable

Connecting the tool :



Change mode of oscilloscope from "TRIG MODE" to "NORM".

Adjustment Procedure :

(1) Playback the alignment tape.
(2) Turn the tracking control potentiometer on the front panel to the 「FIXED」 position.
(3) Turn the AC adjustment screw until the positions of the CTL waveform and RF waveform meet the specification 1. (Fig. 1 and Fig. 2)
(4) Change the connection to the oscilloscope as follows.
TRIG : SW'ING PULSE terminal/RP extension tool
(5) Turn the AC adjustment screw until the center of the RF waveform is the maximum level. Confirm that the RF waveform meet the specification 2. (Fig. 3)
(6) Turn the tracking control potentiometer on the front panel left and right, and confirm that the center of the RF waveform is the maximum level when the potentiometer is at the 「FIXED」 position. (specification 3)

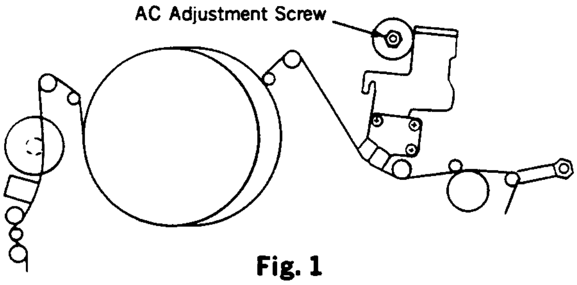


Fig. 1

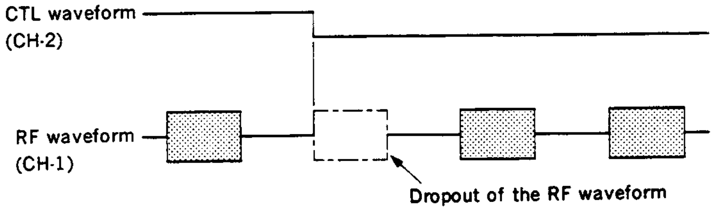
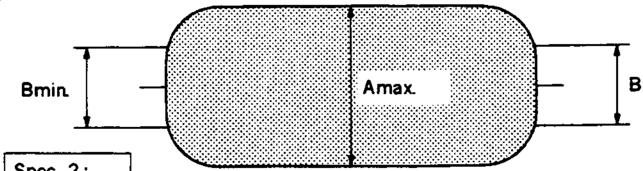


Fig. 2

Spec. 1 :
The point where the RF waveform has dropout must coincide with the falling edge of the CTL waveform.
If the RF waveform dropout point has shifted to the right at the CTL datum....Turn the AC adjustment screw counterclockwise.
If the RF waveform dropout point has shifted to the left at the CTL datum....Turn the AC adjustment screw clockwise.



Spec. 2 :
$\frac{\text{Bmin.}}{\text{Amax.}} \geqq 0.8$

Fig. 3

Spec. 3 :
The center part of the RF waveform must be the maximum level when the tracking control potentiometer is at the 「FIXED」 position.

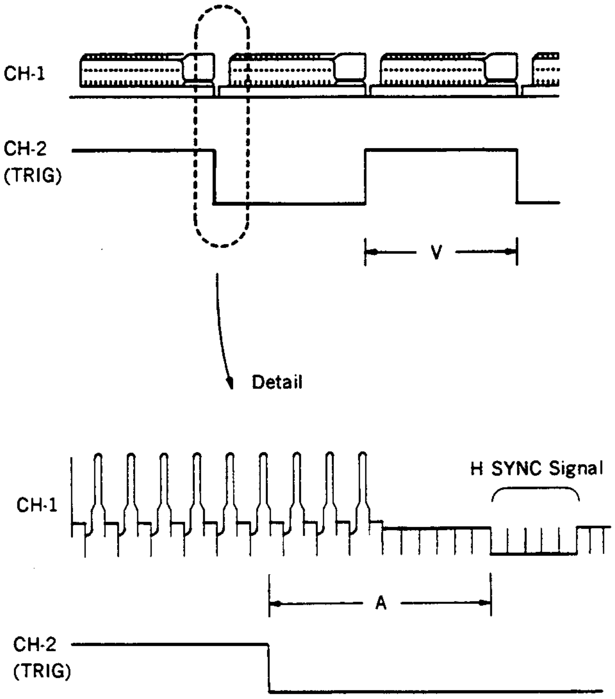
6-13. SWITCHING POSITION ADJUSTMENT

Tools :

Oscilloscope
RP extension tool (J-6381-370A)
Alignment tape (JVC-MH-2)

Adjustment Procedure :

(1) Connect the oscilloscope as follows.
    CH-1 : TP-304/VO board (D-2)
    TRIG : SW'ING PULSE terminal/RP extension tool
    GND : GND terminal/RP extension tool
(2) Playback the color bar part of the alignment tape.
(3) Set the tracking control potentiometer on the front panel to the 「FIXED」 position.
(4) Turn RV102 (D-9) on the SS board until the specification is satisfied.



Spec. :
A=6.5±0.5 H
(416±32 μs)

6-14. TAPE RUNNING CHECK (FF, REW MODE)

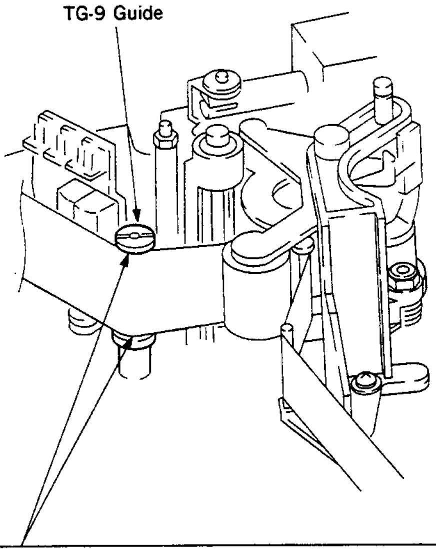
Tool :
S-VHS cassette tape (T-160)

Checking Procedure :

(1) Insert the cassette tape (T-160) into the VTR.
(2) Press the FF button.
(3) Confirm that the tape travels without riding up on the upper or lower flange of the TG-9 guide for about 15 seconds after the VTR goes into the FF mode.
(4) Press the REW button.
(5) Confirm that the tape travels without riding up on the upper or lower flange of the TG-9 guide for about 15 seconds after the VTR goes into the REW mode.

If specification is not satisfied :

(6) Re-adjust the RVS guide height according to sub-section 6-7.
(7) Check steps (2) to (5).



Spec. :
The tape must not ride up on the upper or lower flange.

6-15. SELF RECORDING/PLAYBACK CHECK

Tools :
Oscilloscope
S-VHS cassette tape (T-120)
RP extension tool (J-6381-370-A)

Checking Procedure :

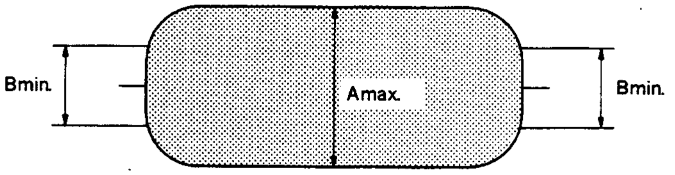
(1) Connect the oscilloscope as follows.
  CH-1 : VIDEO PB S-VHS RF terminal/RP extension tool
  TRIG : SW'ING PULSE terminal/RP extension tool
  GND : GND terminal/RP extension tool

(2) Set the tracking control potentiometer on the front panel to the 「FIXED」 position.

(3) Perform recording under no-signal conditions using the center part of the cassette tape (T-120).

(4) Confirm that the playback RF waveform meet the specification. (Fig. 1)

(5) After tape run alignments has been completed, apply locking compound to the AC adjustment screw, and also the audio head azimuth and zenith adjustment screw. (Fig. 2)


Bmin.
Amax.
Bmin.

Spec. :
$\frac{\text{Bmax.}}{\text{Amax.}} \geq 0.7$

Fig. 1

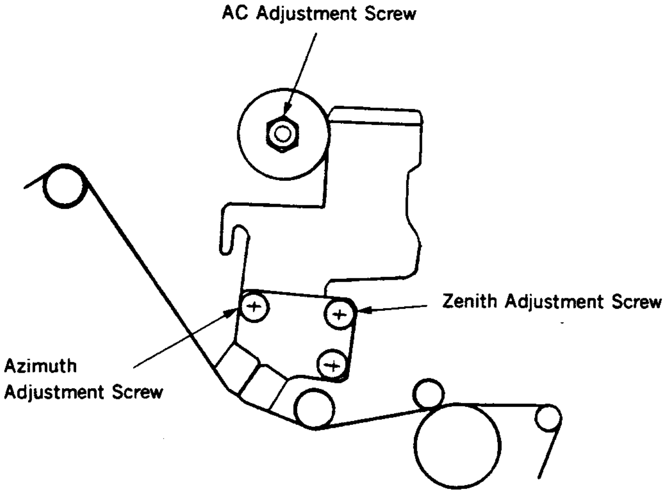

AC Adjustment Screw
Zenith Adjustment Screw
Azimuth
Adjustment Screw

Fig. 2

SECTION 7
GENERAL INFORMATION FOR ELECTRICAL ALIGNMENTS

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7-2. EQUIPMENT USED FOR ELECTRICAL ALIGNMENTS

It is recommended to use either the equipment described below or equivalents as measure equipment and signal generator.

[Measure Equipment]

- Oscilloscope (TEKTRONIX 2445B/150 MHz or more)
- Waveform Monitor/Vector Scope (TEKTRONIX 1751)
- Audio Level Meter (HEWLETT PACKARD HP3400)
- Frequency Counter (ADVANTEST TR5821AK)
- Digital Voltmeter

[Signal Generator]

- Multiformat Signal Generator (TEKTRONIX TSG-131 with S-VIDEO OUT)
- Audio Signal Generator (HEWLETT PACKARD HP8904)

[Tool]

- RP Extension Tool (Sony Part No. J-6381-370-A)
- S Video Cable
- S-BNC Video Cable (Sony Part No. J-6381-380-A)
- Y/C Delay Adjustment Tool (Sony Part No. J-6381-910-A)
- Alignment Tape
  KRV-39PF (Sony Part No. 8-192-603-96)
  KRV-45PS (N-VHS) (Sony Part No.: pending)
  KRV-45HPS (S-VHS) (Sony Part No.: pending)
- Blank Tape
  N-VHS Tape (GR-120KG: Sony Part No. 8-896-024-94)
  S-VHS Tape

<Note> See SECTION 6. TAPE RUN ALIGNMENTS (page 6-3) for how to use the RP extension tool.

7-3. ELECTRICAL ADJUSTMENT ASSOCIATED WITH INSPECTION AND MAINTENANCE

7-3-1. Adjustment for Drum Ass'y or Upper Drum Ass'y Replacement

9-4. AFM PB RF Level Adjustment
9-5. AFM REC RF Level Adjustment
10-27. S-VHS Y REC Current Adjustment
10-28. N-VHS Y REC Current Adjustment
10-29. S-VHS Chroma REC Current Adjustment
10-30. Overall Y/C Delay Adjustment
10-31. Overall Y RF Level Adjustment

7-3-2. Adjustment for Audio Head Ass'y Replacement

9-9. LAU PB Level Adjustment
9-10. LAU PB Frequency Response Adjustment
9-11. LAU REC Level Adjustment
9-12. LAU Overall Frequency Response Adjustment

7-3-3. Adjustment for Capstan Motor (SCV-0401A) Replacement

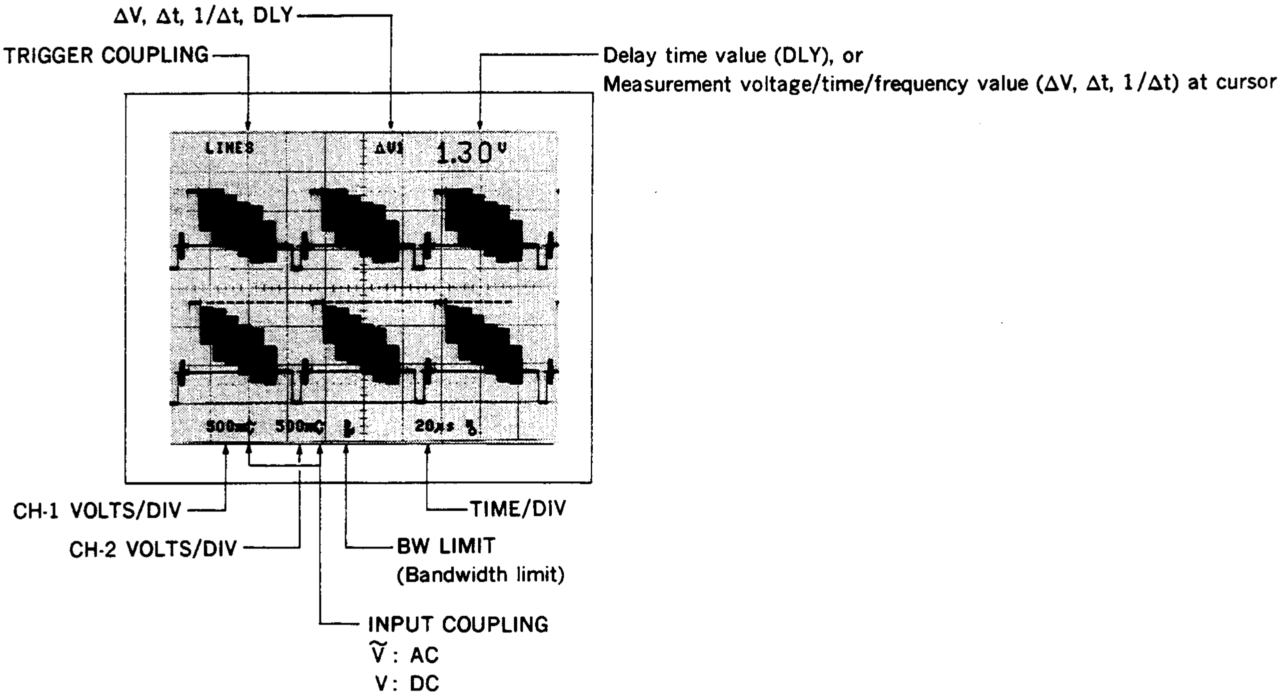
8-3. Capstan FG Duty Adjustment
8-4. Stop Servo Adjustment

7-4. SETTING OF EQUIPMENT FOR ELECTRICAL ALIGNMENTS

Oscilloscope

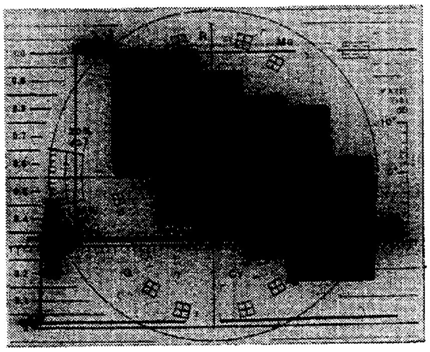
- With waveform photograph used for waveform display:

  The setting conditions are displayed on the photograph as given below.

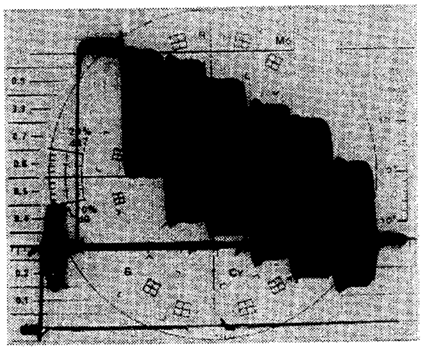

ΔV, Δt, 1/Δt, DLY
TRIGGER COUPLING
Delay time value (DLY), or
Measurement voltage/time/frequency value (ΔV, Δt, 1/Δt) at cursor
LINES
ΔV1
1.30V
500mV~
500mV~
20μs
CH-1 VOLTS/DIV
CH-2 VOLTS/DIV
TIME/DIV
BW LIMIT
(Bandwidth limit)
INPUT COUPLING
Ṽ: AC
V: DC

7-5. TEST SIGNAL FOR VIDEO SYSTEM

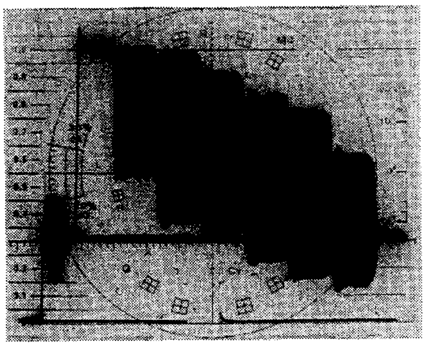
1. 75% COLOR BARS



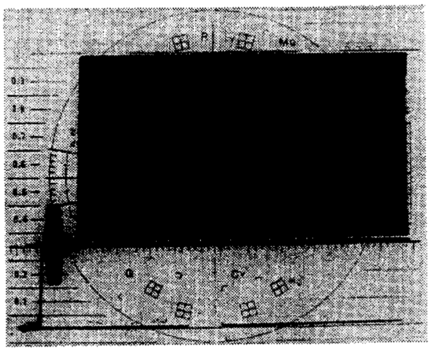
2. KRV-45HPS



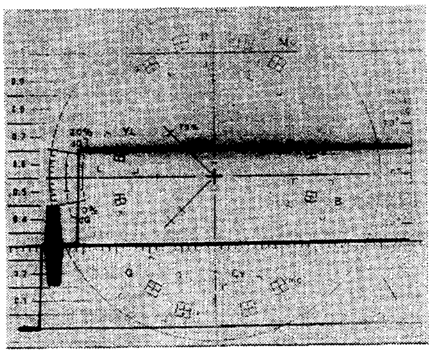
3. KRV-45PS



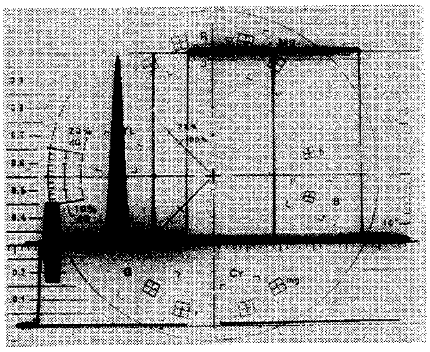
4. CHROMA NOISE



5. 50% FLAT FIELD



6. PULSE & BAR



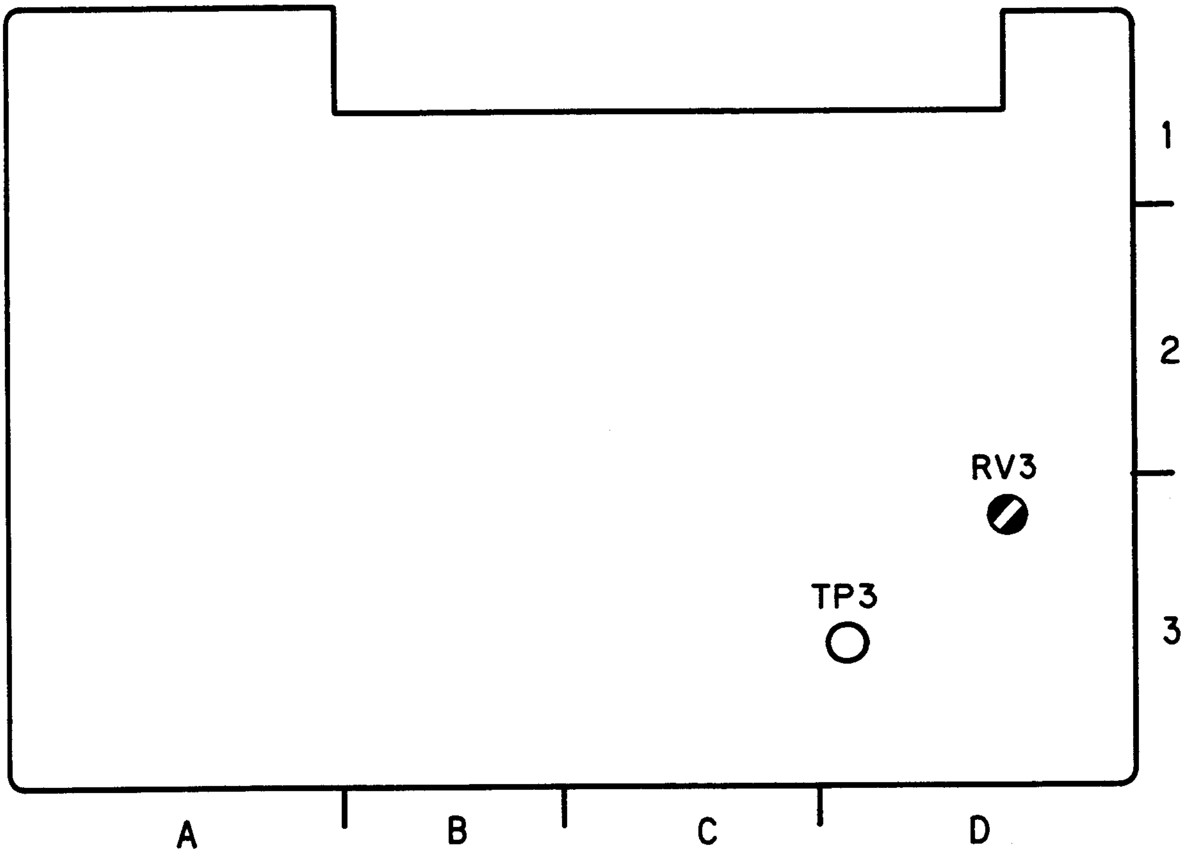
SECTION 8
SYSTEM CONTROL AND SERVO SYSTEM ALIGNMENTS

[Equipment Required]
- Digital voltmeter
- Oscilloscope
- S-VHS blank tape

8-1. +5.3V REGULATOR ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• POWER : ON • Connect the digital voltmeter to test point (TP).	TP2/DC-53A (D-3) $5.3^{+0.1}_{-0}$ V dc	⊘RV3/DC-53A (D-2)

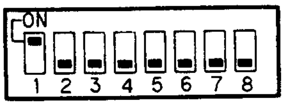
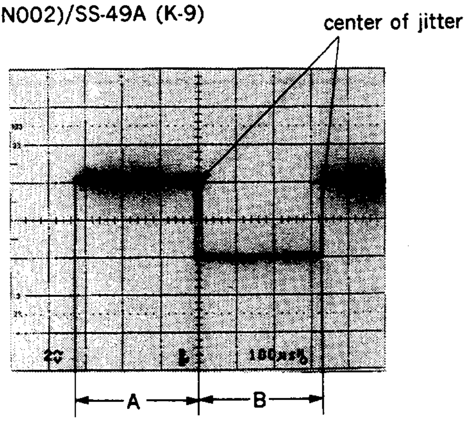
Locations of RV3 and TP3 on DC-53A board. (A side)



8-2. BACK-UP VOLTAGE ADJUSTMENT

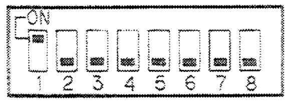
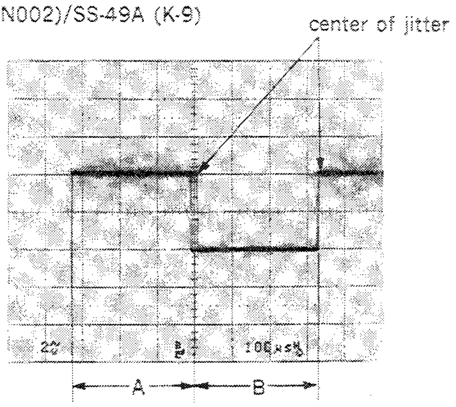
Machine condition for adjustment	Specifications	Adjustments
• Connect TP101/SS-49A (K-2) to E3/SS-49A (H-4) with a 100 ohms resistor. • POWER: ON • Connect the digital voltmeter to test point (TP). • After adjustment, remove the resistor.	TP101/SS-49A (K-2) $5.4^{+0}_{-0.1}$ V dc	➐RV101/SS-49A (L-1)

8-3. CAPSTAN FG DUTY ADJUSTMENT

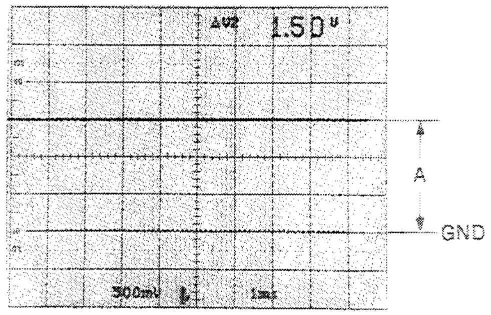
Machine condition for adjustment	Specifications	Adjustments
• S101/SS-49A (H-9) No.1 : ON  S101 • Insert a S-VHS blank tape. • REC mode • Connect the oscilloscope to test point (TP). • After adjustment, set the S101 (No.1) to OFF.	TP103 (CN002)/SS-49A (K-9)  A=B (DUTY RATE 50%)	➐RV503/SS-49A (J-9)

8-4. STOP SERVO ADJUSTMENT

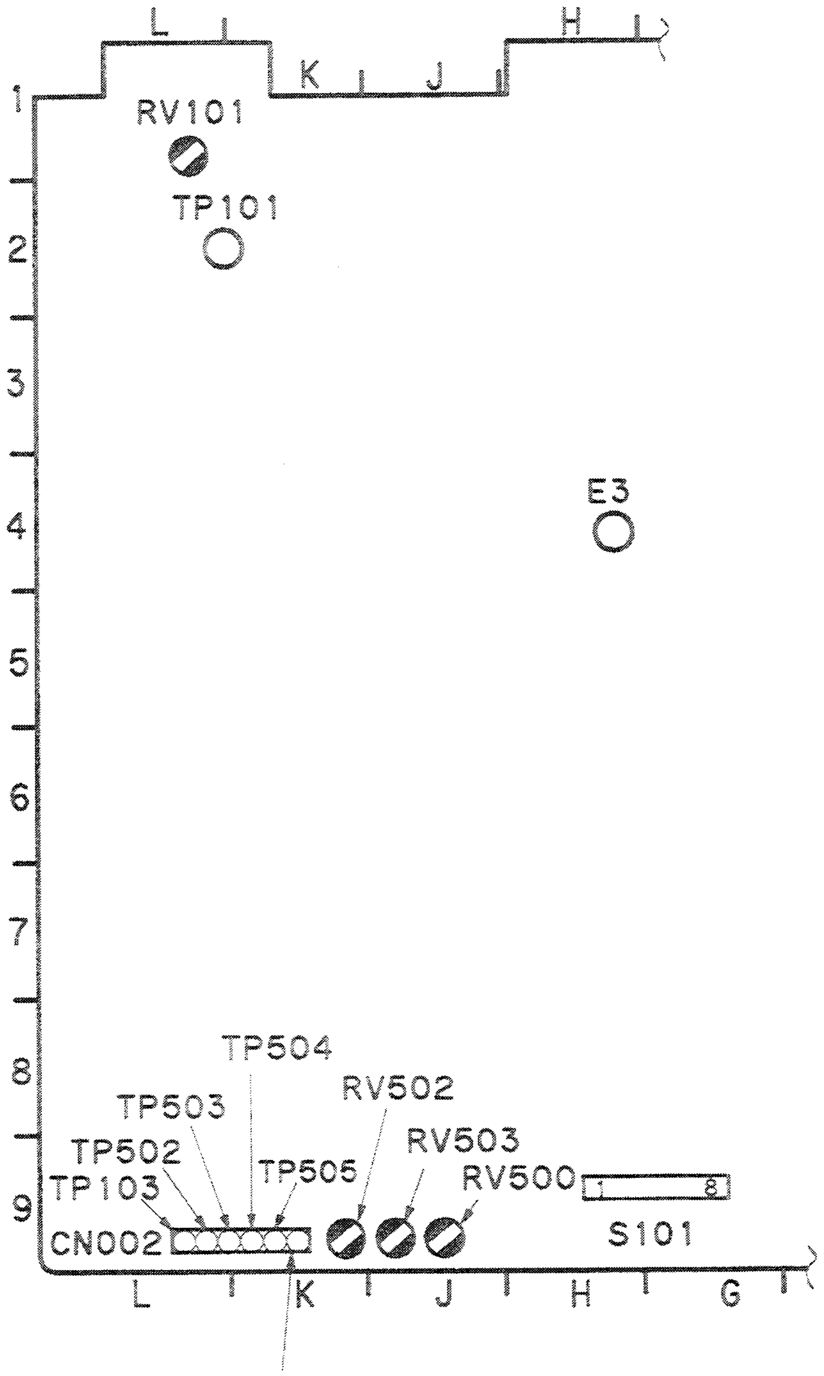
Step 1.

Machine condition for adjustment	Specifications	Adjustments
• S101/SS-49A (H-9) No.1 : ON  ON 1 2 3 4 5 6 7 8 S101 • Insert a S-VHS blank tape. • REC mode • Connect the oscilloscope to test point (TP). • After adjustment, set the S101 (No.1) to OFF.	TP505 (CN002)/SS-49A (K-9)  A=B (DUTY RATE 50%)	⊘RV500/SS-49A (J-9)

Step 2.

Machine condition for adjustment	Specifications	Adjustments
• REC PAUSE mode • Connect between TP502 (CN002)/SS-49A (K-9) and TP503 (CN002)/SS-49A (K-9) with a shorting clip. • Connect the oscilloscope to test point (TP).	TP504 (CN002)/SS-49A (K-9)  A=1.5±0.1 V dc • Remove the shorting clip, and check that TP103 (CN002)/SS-49A (K-9) disappear a waveform on the oscilloscope.	⊘RV502/SS-49A (K-9)

Locations of CN, E, RVs, S and TPs on SS-49A board. (A side)


L
K
J
H
G
1
2
3
4
5
6
7
8
9
RV101
TP101
E3
TP504
TP503
TP502
TP103
TP505
RV502
RV503
RV500
CN002
S101
1
8

E1 ; When S/N 10031 and higher
E5 ; When S/N 10001 thru 10030 (Only Board No. 1-641-575-12)

SECTION 9
AUDIO SYSTEM ALIGNMENTS

[Equipment Required]

- Oscilloscope
- Audio signal generator
- Audio attenuator
- Audio level meter
- Frequency counter
- RP extension tool (Refer to page 6-3.)
- S-VHS blank tape
- Alignment tapes

Alignment Tape Name (Part No.)	REC Mode	Contents		
		Video Area	Audio Area	Control Area
KRV-39PF (8-192-603-96)	SP	• None	• RF	• None
KRV-45PS (Part No.: pending)	SP	• Color bars 170 min	• Normal audio 7 kHz 15 seconds, 400 Hz 15 seconds (alternately) • Hi-Fi audio 170 min 400 Hz (stereo)	• CTL frequency 25 Hz

[Setting of switch]

FRONT PANEL

- Hi-Fi REC switch ....ON
- TRACKING control VR ....FIXED

[Note]

- 0 dBu=0.775 Vrms

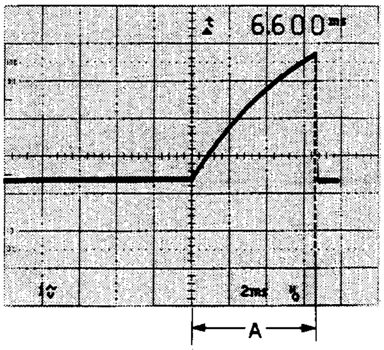
9-1. LINE OUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN : 400 Hz, −10 dBu • AUDIO OUT SELECT switch : Hi-Fi • STOP (E-E) mode • Connect the audio level meter to AUDIO OUT.	CH-1: AUDIO OUT CH-1/L (terminated with 47 kΩ) CH-2: AUDIO OUT CH-2/L (terminated with 47 kΩ) −10.0±0.3 dBu	⊘ CH-1: RV10/AU-161A (C-3) ⊘ CH-2: RV11/AU-161A (D-3)

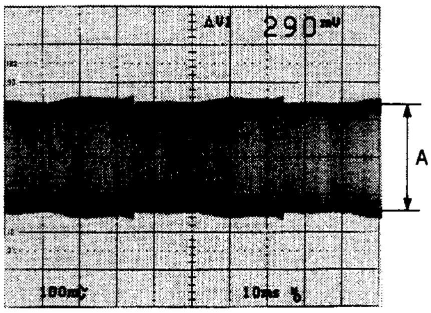
9-2. AFM CARRIER ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN : no signal • Insert a S-VHS blank tape. • REC mode • Connect the frequency counter to test point (TP).	TP7/AU-161A (B-1) 1.400±0.005 MHz	⊘RV3/AU-161A (B-1)
	TP11/AU-161A (B-3) 1.800±0.005 MHz	⊘RV7/AU-161A (B-3)

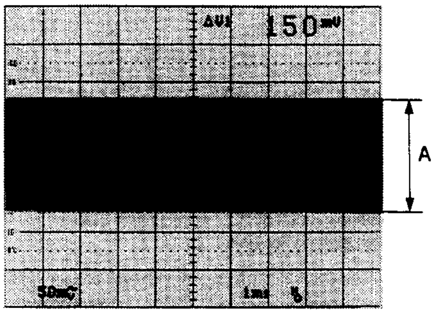
9-3. AFM SWITCHING POSITION ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the alignment tape KRV-45PS. • Connect the oscilloscope to test point (TP).	TP3/AU-161A (A-2)  A=6.6±0.2 ms	⊘RV1/AU-161A (A-3)

9-4. AFM PB RF LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the alignment tape KRV-39PF. • Tracking VR: center click (FIXED) • Connect the oscilloscope to test points (TPs).	TP5/AU-161A (B-2)  A=290±20 mV p-p	⊘RV2/AU-161A (A-3) Trigger: TP3/AU-161A (A-2)

9-5. AFM REC RF LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN : no signal • Insert a S-VHS blank tape. • REC mode • Connect the oscilloscope to CN804 (pin 1) on RP-62A board.	CN804-1/RP-62A (C-1) (RP extension tool: AFM REC CURR. terminal)  A=150±10 mV p-p (When using the RP extension tool, connect the oscilloscope to AFM REC CURR. terminal.)	⊘RV6/AU-161A (B-3)

9-6. AFM PB LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• AUDIO OUT SELECT switch : Hi-Fi • Connect the audio level meter to AUDIO OUT. • Play back the alignment tape KRV-45PS.	CH-1: AUDIO OUT CH-1/L (terminated with 47 kΩ) CH-2: AUDIO OUT CH-2/R (terminated with 47 kΩ) −1.0±0.5 dBu	⊘CH-1: RV4/AU-161A (B-1) ⊘CH-2: RV8/AU-161A (B-4)

9-7. AFM DEVIATION ADJUSTMENT

Step 1.

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN : 400 Hz, −10 dBu • AUDIO OUT SELECT switch : Hi-Fi • Connect the audio level meter to AUDIO OUT. • Perform the self-recording/play back(measurement) with a S-VHS blank tape.	CH-1 : AUDIO OUT CH-1/L (terminated with 47 kΩ) CH-2 : AUDIO OUT CH-2/R (terminated with 47 kΩ) −10.0±0.5 dBu <Note> • When the specification is not satisfied, perform the adjustment described in Step 2. • Calculate the difference between the specification (−10.0 dBu) and the measured value in measurement for CH-1 and CH-2. Correction value=Specification value−Measured value	

Step 2.

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN : 400 Hz, −10 dBu • AUDIO OUT SELECT switch : Hi-Fi • STOP (E-E) mode • Connect the audio level meter to test point (TP).	CH-1 : TP8/AU-161A (B-1) CH-2 : TP12/AU-161A (B-2) • Check the measured value at test point. Specification value=Measured value−1/2×correction value • Make the output value coincide with specification value (Step 2). • Perform the adjustment described in Step 1 again. Example) Step 1 Specification −10.0 dBu Measured value −11.0 dBu Correction value = −10.0 dBu− (−11.0 dBu) =1.0 dBu Step 2 Measured value −19 dBu Specification value = −19 dBu−1/2×1.0 dBu = −19.5 dBu	⊘CH-1 : RV5/AU-161A (C-1) ⊘CH-2 : RV9/AU-161A (B-2)

9-8. LAU EE LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN : 1 kHz, −10 dBu • Connect the audio level meter to AUDIO OUT. • AUDIO OUT SELECT switch : NORMAL • Insert a S-VHS blank tape. • STOP (E-E) mode	CH-1 : AUDIO OUT CH-1/L (terminated with 47 kΩ) CH-2 : AUDIO OUT CH-2/R (terminated with 47 kΩ) −10.0±0.5 dBu	⊘CH-1 : RV203/AU-161A (I-3) ⊘CH-2 : RV303/AU-161A (G-3)

9-9. LAU PB LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• AUDIO OUT SELECT switch : NORMAL • Connect the audio level meter to AUDIO OUT. • Play back the Normal audio 400 Hz portion of the alignment tape KRV-45PS.	CH-1 : AUDIO OUT CH-1/L (terminated with 47 kΩ) CH-2 : AUDIO OUT CH-2/R (terminated with 47 kΩ) −10.0±0.5 dBu	⊘CH-1 : RV202/AU-161A (I-3) ⊘CH-2 : RV302/AU-161A (H-3)

9-10. LAU PB FREQUENCY RESPONSE ADJUSTMENT

<table>
<tr><th>Machine condition for adjustment</th><th>Specifications</th><th>Adjustments</th></tr>
<tr><td>• AUDIO OUT SELECT switch
: NORMAL
• Connect the audio level meter to AUDIO OUT.
• Play back the Normal audio 400 Hz and 7 kHz portion of the alignment tape KRV-45PS.</td><td>CH-1 : AUDIO OUT CH-1/L (terminated with 47 kΩ)
CH-2 : AUDIO OUT CH-2/R (terminated with 47 kΩ)<table><tr><th>Frequency</th><th>Level</th></tr><tr><td>400 Hz</td><td>Reference</td></tr><tr><td>7 kHz</td><td>Reference±0.5 dBu</td></tr></table></td><td>⊘CH-1 : RV201/AU-161A (J-3)
⊘CH-2 : RV301/AU-161A (H-3)</td></tr>
</table>

9-11. LAU REC LEVEL ADJUSTMENT

Step 1.

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN : 1 kHz, −10 dBu • AUDIO OUT SELECT switch : NORMAL • Connect the audio level meter to AUDIO OUT. • Perform the self-recording/play back (measurement) with a S-VHS blank tape.	CH-1 : AUDIO OUT CH-1/L (terminated with 47 kΩ) CH-2 : AUDIO OUT CH-2/R (terminated with 47 kΩ) −10.0±0.3 dBu <Note> • When the specification is not satisfied, perform the adjustment described in Step 2. • Calculate the difference between the specification (−10.0 dBu) and the measured value in measurement for CH-1 and CH-2. Correction value=Specification value−Measured value	

Step 2.

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN : 1 kHz, −10 dBu • AUDIO OUT SELECT switch : NORMAL • STOP (E-E) mode • Connect the audio level meter to test point (TP).	CH-1 : TP206/AU-161A (J-2) CH-2 : TP306/AU-161A (H-2) • Check the measured value at test point. Specification value=Measured value−Correction value • Set the above specification value to output level and perform the adjustment described in Step 1 again. Example) Step 1 Specification −10.0 dBu Measured value −11.0 dBu Correction value =−10.0 dBu− (−11.0 dBu) =1.0 dBu Step 2 Measured value −19 dBu Specification value =−19 dBu−1.0 dBu =−20 dBu	⊘CH-1 : RV204/AU-161A (J-2) ⊘CH-2 : RV304/AU-161A (H-2)

9-12. LAU OVERALL FREQUENCY RESPONSE ADJUSTMENT

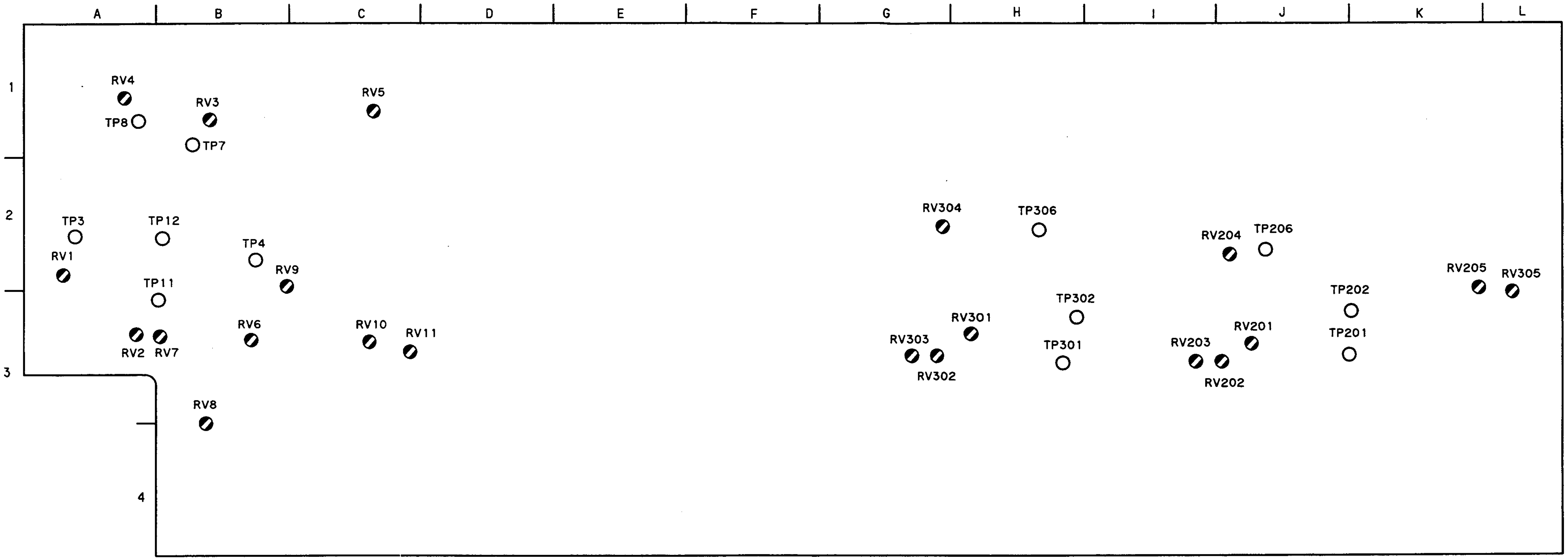
Step 1.

<table>
<tr><th>Machine condition for adjustment</th><th>Specifications</th><th>Adjustments</th></tr>
<tr><td>• CH-1, 2 AUDIO IN
: 1 kHz, 7 kHz, −30 dBu
• AUDIO OUT SELECT switch
: NORMAL
• Connect the audio level meter to AUDIO OUT.
• Perform the self-recording/play back (measurement) with a S-VHS blank tape.</td><td>CH-1 : AUDIO OUT CH-1/L (terminated with 47 kΩ)
CH-2 : AUDIO OUT CH-2/R (terminated with 47 kΩ)
<table>
<tr><th>Frequency</th><th>Level</th></tr>
<tr><td>1 kHz</td><td>Reference</td></tr>
<tr><td>7 kHz</td><td>Reference±2 dBu</td></tr>
</table>
〈Note〉 If the specification is not satisfied, check the measurement value, perform the adjustment of the Step 2.</td><td></td></tr>
</table>

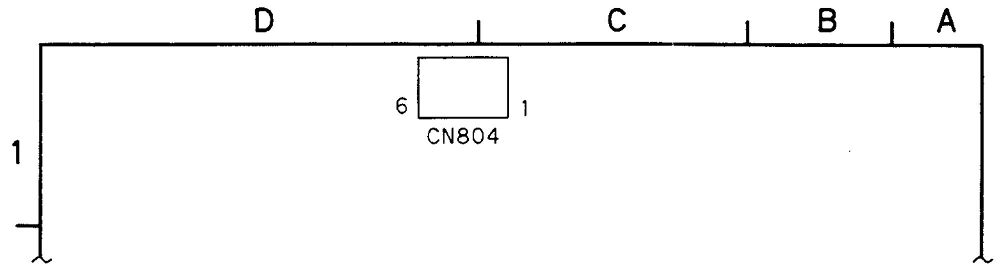
Step 2.

Machine condition for adjustment	Specifications	Adjustments
• CH-1, 2 AUDIO IN : 1 kHz, −10 dBu • Insert a S-VHS blank tape. • REC mode • Connect the audio level meter to test point (TP).	CH-1 : TP201/AU-161A (K-3) GND : TP202/AU-161A (K-3) CH-2 : TP301/AU-161A (H-3) GND : TP302/AU-161A (I-3) • With measured value (7 kHz) is higher than reference value (1 kHz) : Increase the level of TP201 (CH-1) or TP301 (CH-2). • With measured value (7 kHz) is lower than reference value (1 kHz) : Decrease the level of TP201 (CH-1) or TP301 (CH-2). Repeat Step 1 and Step 2 until she specification of Step 1 is satisfied.	⊘ CH-1 : RV205/AU-161A (K-2) ⊘ CH-2 : RV305/AU-161A (I-2)

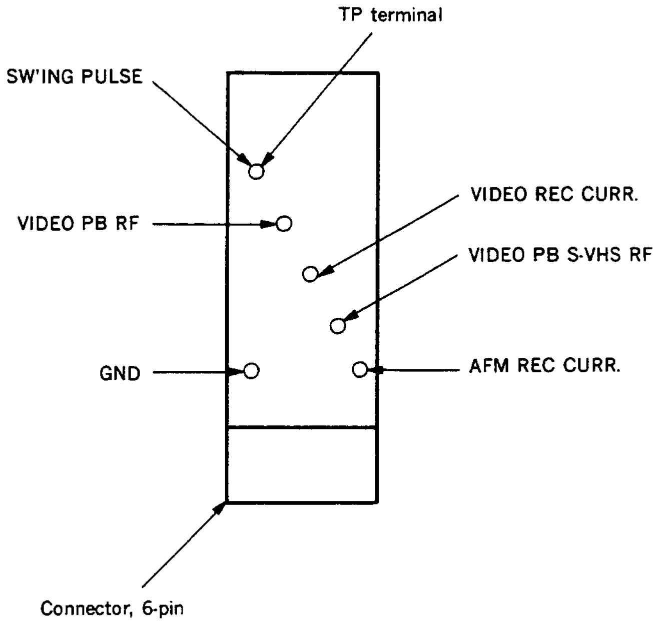
Locations of RVs and TPs on AU-161A board. (B side)


A
B
C
D
E
F
G
H
I
J
K
L
1
2
3
4
RV4
TP8
RV3
TP7
RV5
TP3
TP12
RV1
TP4
RV9
TP11
RV2
RV7
RV6
RV10
RV11
RV8
RV304
TP306
RV301
RV303
RV302
TP302
TP301
RV204
TP206
RV203
RV201
RV202
TP202
TP201
RV205
RV305

Location of CN804 on RP-62A board. (A side)


D
C
B
A
1
6
1
CN804

Locations of TP terminals on RP extension tool.


TP terminal
SW'ING PULSE
VIDEO PB RF
VIDEO REC CURR.
VIDEO PB S-VHS RF
GND
AFM REC CURR.
Connector, 6-pin

SECTION 10
VIDEO SYSTEM ALIGNMENTS

[Equipment Required]

- Oscilloscope
- Frequency counter
- Digital voltmeter
- Multiformat signal generator (with S-VIDEO OUT)
- Waveform/Vector monitor
- Y/C delay adjustment tool
- S-BNC video cable
- Video cable with S connector
- RP extension tool (Refer to page 6-3.)
- Blank tape (Normal-VHS)
- Blank tape (Super-VHS)
- Alignment tapes

Alignment Tape Name (Part No.)	REC Mode	Contents		
		Video Area	Audio Area	Control Area
KRV-45PS (Normal-VHS) (Part No. : pending)	SP	• Color bars 170 min	• Normal audio 7 kHz 15 seconds, 400 Hz 15 seconds (alternately) • HiFi audio 170 min 400 Hz (stereo)	• CTL frequency 25 Hz
KRV-45HPS (Super-VHS) (Part No. : pending)				

[Setting of switch]

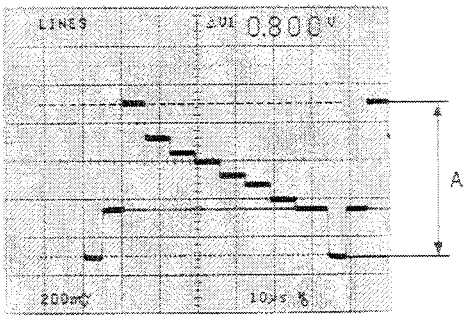
REAR PANEL
- 75 Ω termination switches for VIDEO IN (S type and BNC type)……75 Ω ON

FRONT PANEL
- CTL/MENU switch……………………………………………………CTL
- PROGRAM switch……………………………………………………OFF
- TRACKING control VR………………………………………………FIXED

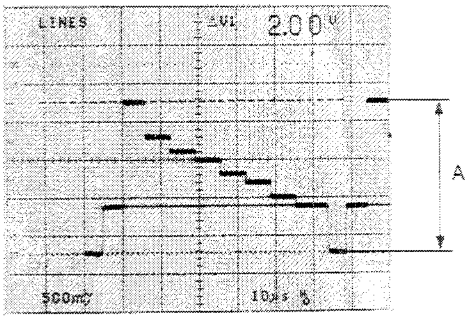
[Note]

- Depending on the menu setting provided at the factory, this set is set to the following modes of operation (S-VHS selection).
  When recording with S-VHS tape, S-VHS (Super-VHS) mode is selected for recording.
  When recording with N-VHS tape, N-VHS (Normal-VHS) mode is selected for recording.
  When playing back, depending on the recording mode recorded on the tape, either S-VHS or N-VHS mode will be automatically selected. (Refer to Sec. 1-8 Menu Operations on page 1-30.)

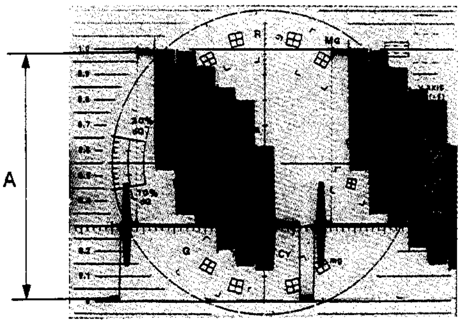
10-1. Y AGC LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : color bars signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • STOP (E-E) mode • Connect the oscilloscope to test points (TPs).	TP303/VO-37A (D-4)  A=0.80±0.05 V p-p	⊘RV101/VO-37A (K-4) Trigger : TP301/VO-37A (C-5)

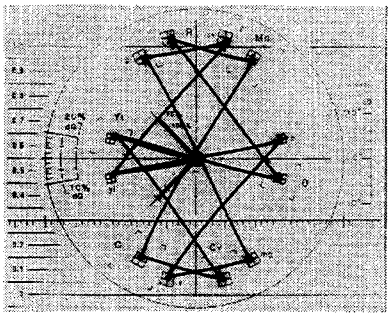
10-2. S VIDEO OUT Y OUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : color bars signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • STOP (E-E) mode • Connect the oscilloscope to test points (TPs).	TP492/VO-37A (G-1)  A=2.0±0.1 V p-p	⊘RV482/VO-37A (G-2) Trigger : TP301/VO-37A (C-5)

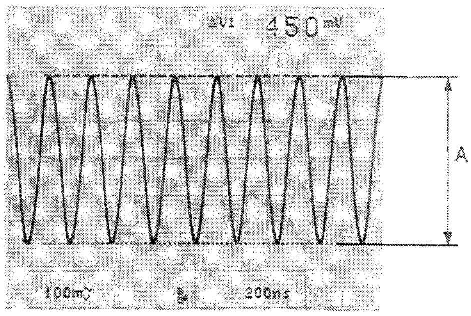
10-3. VIDEO OUT MIX Y LEVEL ADJUSTMENT

Machine condition for adjustment	**Specifications**	**Adjustments**
• S-VIDEO IN : color bars signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • STOP (E-E) mode Waveform/Vector monitor • WAVEFORM	VIDEO OUT connector (terminated with 75 Ω)  A=1.00±0.05 V p-p	⊘RV480/VO-37A (G-4)

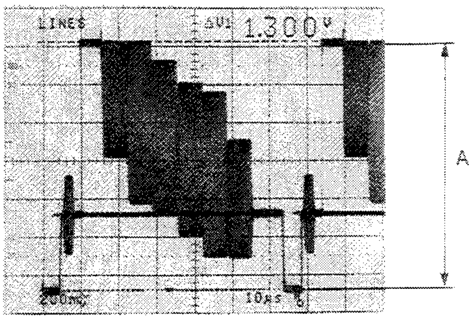
10-4. VIDEO OUT MIX CHROMA LEVEL ADJUSTMENT

Machine condition for adjustment	**Specifications**	**Adjustments**
• S-VIDEO IN : color bars signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • STOP (E-E) mode Waveform/Vector monitor • VECT	VIDEO OUT connector (terminated with 75 Ω)  • The luminous spot of burst shall be at 75% position on mark. • One and more luminous spots shall within the frame of each ⊞ mark.	⊘RV481/VO-37A (G-3)

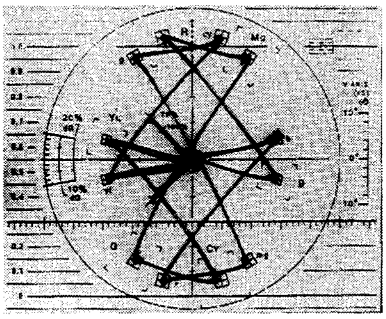
10-5. PB FSC ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45PS. • Connect the frequency counter through the oscilloscope to test point (TP).	TP602/CR-39 (G-2)  4.433619±0.000020 MHz (A≧300 mV p-p)	⊘CV601/CR-39 (D-2) Trigger : INT

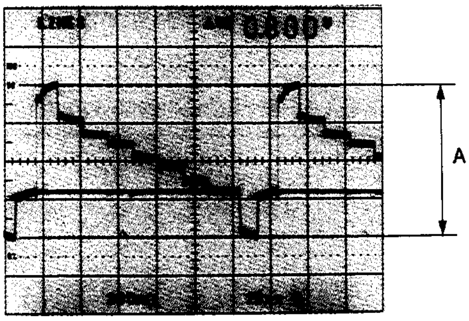
10-6. COMPOSITE IN Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : no connection • VIDEO IN : color bars signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • STOP (E-E) mode • Connect the oscilloscope to test points (TPs).	TP302/VO-37A (A-5)  A=1.30±0.05 V p-p	⊘RV310/VO-37A (B-1) Trigger : TP301/VO-37A (C-5)

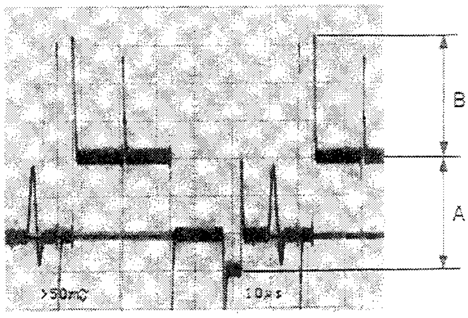
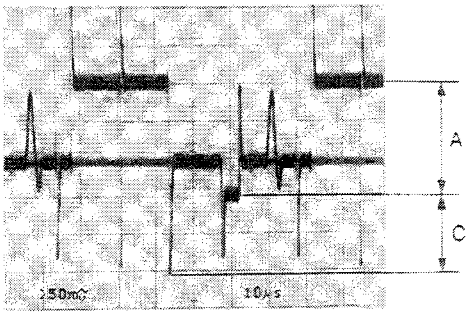
10-7. COMPOSITE IN CHROMA LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN: no connection • VIDEO IN : color bars signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • STOP (E-E) mode Waveform/Vector monitor • VECTOR	VIDEO OUT connector (terminated with 75 Ω)  • The luminous spot of burst shall be at 75% position on mark. • One and more luminous spots shall within the frame of each ⊞ mark.	⊘RV311/VO-37A (B-1)

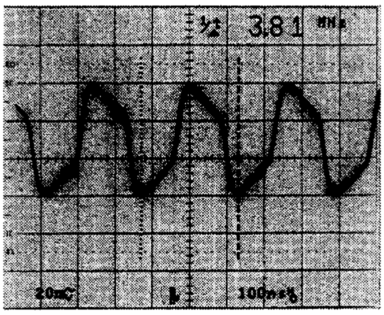
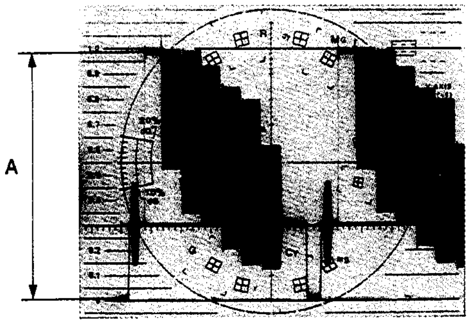
10-8. S-VHS Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : color bars signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • STOP (E-E) mode • Connect the oscilloscope to test points (TPs).	TP201/VO-37A (E-5)  A=0.80±0.04 V p-p	⊘RV202/VO-37A (E-5) Trigger : TP301/VO-37A (C-5)

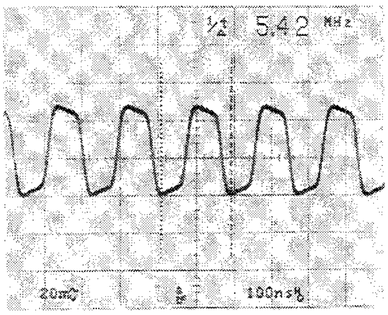
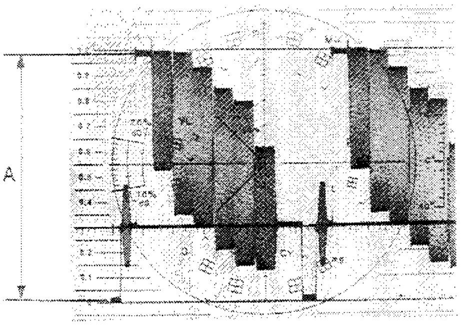
10-9. N-VHS WHITE/DARK CLIP ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : no connection • VIDEO IN : pulse & bar signal • Insert a N-VHS blank tape. • STOP (E-E) mode • Connect the oscilloscope to test points (TPs).	TP101/VO-37A (K-3)  $\frac{B}{A}=110\pm2\%$ (A=VIDEO signal+SYNC signal. A is reference level.)	⊘RV104/VO-37A (K-2) Trigger : TP301/VO-37A (C-5)
	TP101/VO-37A (K-3)  $\frac{C}{A}=70\pm2\%$ (A=VIDEO signal+SYNC signal. A is reference level.)	⊘RV108/VO-37 (K-2) Trigger : TP301/VO-37A (C-5)

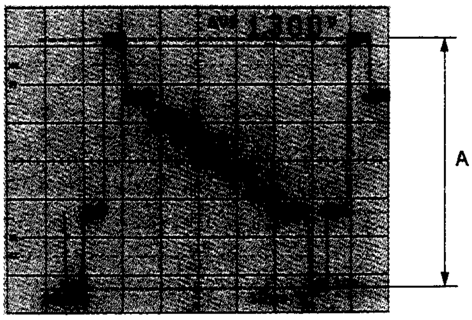
10-10. N-VHS SYNC CHIP CARRIER SET/DEVIATION ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN: no connection • VIDEO IN : no signal • Insert a N-VHS blank tape. • STOP (E-E) mode • Connect the frequency counter through the oscilloscope to test point (TP).	Sync chip carrier set adjustment TP202/VO-37A (L-1)  3.80±0.05 MHz	●RV109/VO-37A (K-2)
• S-VIDEO IN: no connection • VIDEO IN: color bars signal (WHITE 100%, AMPL 75%) • Perform the self-recording/play back (measurement) with a N-VHS blank tape. Waveform/Vector monitor • WAVEFORM	Deviation adjunstment VIDEO OUT connector (terminated with 75 Ω)  A=1.00±0.05 V p-p • With measured value is higher than specification value: Turu only a few RV102 to counterclockwise. • With measured value is lower than specification value: Turu only a few RV102 to clockwise. Repeat the self-recording/play back (measurement) and RV102 adjustment until the specification is satisfied.	●RV102/VO-37A (K-3)

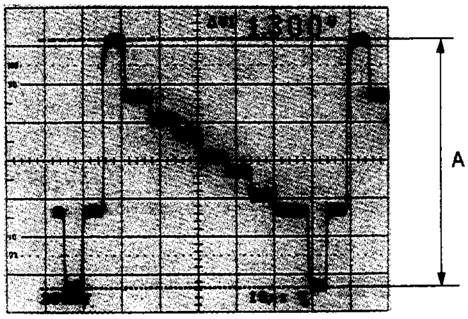
10-11. S-VHS SYNC CHIP CARRIER SET/DEVIATION ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : no signal • Insert a S-VHS blank tape. • STOP (E-E) mode • Connect the frequency counter through the oscilloscope to test point (TP).	Sync chip carrier set adjustment TP202/VO-37A (L-1)  5.42±0.05 MHz	⊘RV107/VO-37A (K-1)
• S-VIDEO IN : color bars signal (WHITE 100%, AMPL 75%) • Perform the self-recording/play back (measurement) with a S-VHS blank tape. Waveform/Vector monitor • WAVEFORM	Deviation adjustment VIDEO OUT connector (terminated with 75 Ω)  A=1.00±0.05 V p-p • With measured value is higher than specification value: Turu only a few RV103 to counterclockwise. • With measured value is lower than specification value: Turu only a few RV103 to clockwise. Repeat the self-recording/play back (measurement) and RV103 adjustment until the specification is satisfied.	⊘RV103/VO-37A (K-3)

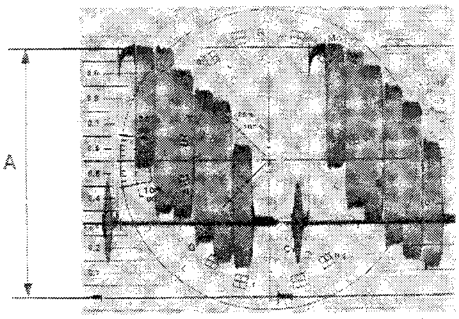
10-12. N-VHS PB DEMOD Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45PS. • Connect the oscilloscope to test points (TPs).	TP302/VO-37A (A-5)  A=1.30±0.05 V p-p	ØRV106/VO-37A (J-2) Trigger : TP301/VO-37A (C-5)

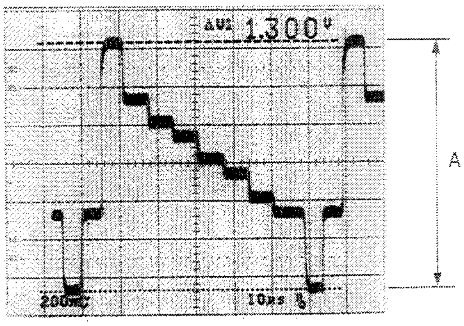
10-13. S-VHS PB DEMOD Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to test points (TPs).	TP302/VO-37A (A-5)  A=1.30±0.50 V p-p	ØRV105/VO-37A (H-1) Trigger : TP301/VO-37A (C-5)

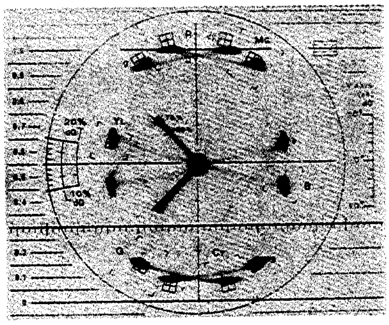
10-14. CNR OUT Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. Waveform/Vector monitor • WAVEFORM	VIDEO OUT connector (terminated with 75 Ω)  A=1.00±0.05 V p-p	⊘RV402/VO-37A (E-3)

10-15. CNR IN Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to test points (TPs).	TP304/VO-37A (D-2)  A=1.30±0.05 V p-p	⊘RV30/VO-37A (D-2) Trigger : TP301/VO-37A (C-5)

10-16. CNR OUT CHROMA LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS.	VIDEO OUT connector (terminated with 75 Ω)  	⊘RV401/VO-37A (E-4)
Waveform/Vector monitor • VECTOR	The luminous spot of burst shall be at 75% position on mark.	

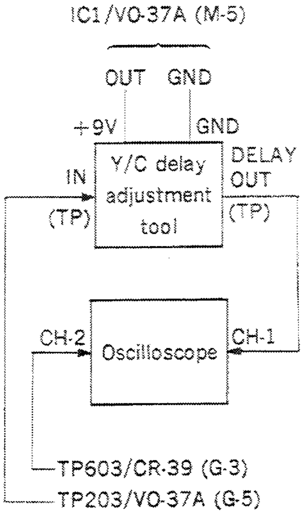
10-17. 320 fH FREE RUN ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45PS. • Connect the digital voltmeter to test point (TP).	TP606/CR-39 (E-2) 3.35±0.01 V dc	⊘RV602/CR-39 (F-2)

10-18. REC Y/C DELAY ADJUSTMENT

<table>
<tr><th>Machine condition for adjustment</th><th>Specifications</th><th>Adjustments</th></tr>
<tr>
<td>

- S-VIDEO IN : pulse & bar signal
- Insert a S-VHS blank tape.
- STOP (E-E) mode
- Connect the oscilloscope to test points (TPs) as follows.

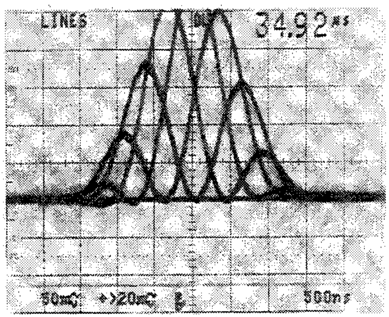

IC1/VO-37A (M-5)
OUT
GND
+9V
GND
IN
(TP)
Y/C delay adjustment tool
DELAY OUT
(TP)
CH-2
Oscilloscope
CH-1
TP603/CR-39 (G-3)
TP203/VO-37A (G-5)

Oscilloscope
- ADD
- CH-2 : VAR

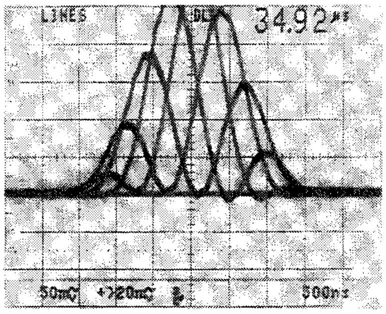
</td>
<td>

CH-1 : TP203/VO-37A (G-5)
(through the Y/C delay adjustment tool)
CH-2 : TP603/CR-39 (G-3)

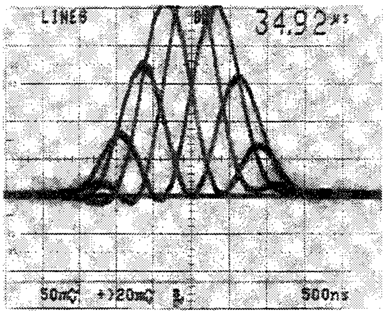
OK


LINES
34.92µs
50mV
→20mV
500ns

NG


LINES
34.92µs
50mV
→20mV
500ns

NG

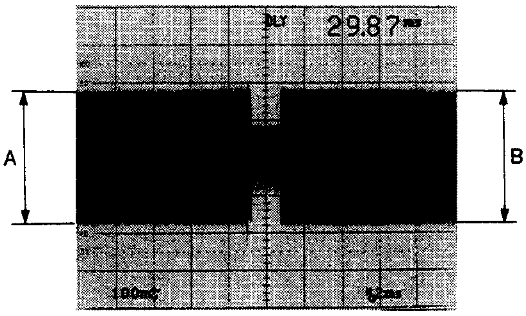

LINES
34.92µs
50mV
→20mV
500ns

Flatten the bottom side portion (envelope) of modulation pulse part.

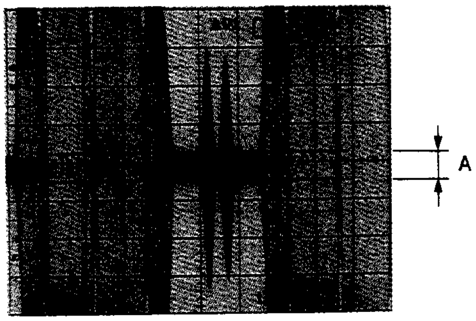
[If the specification can not be satisfied, short the short land slit SL1/CR-39 (G-3), SL2/CR-39 (F-3), or SL3/CR-39 (F-3), and readjust using CV603/CR-39 (G-3) so that specication is satisfied.
(SL No. value becomes large, chroma signal delays behind for the Y signal.)]

</td>
<td>❼CV603/CR-39 (G-3)</td>
</tr>
</table>

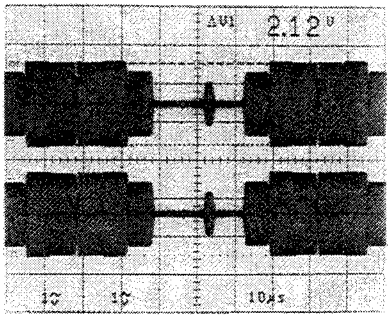
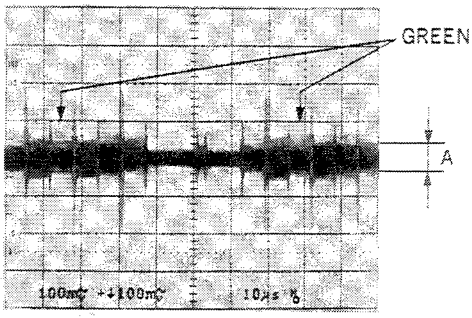
10-19. PB CHROMA RF LEVEL BALANCE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • Tracking VR : Maximize the A and B level. • Connect the oscilloscope to test point (TP) and connector pin. • After the adjustment, set the tracking VR to center click (FIXED).	TP601/CR-39 (F-3)  $\frac{B}{A}=100\pm5\%$ (A is reference level.)	● RV606/CR-39 (G-3) Trigger: CN804-5/RP-62A (C-1) (RP extension tool: SW'ING PULSE terminal)

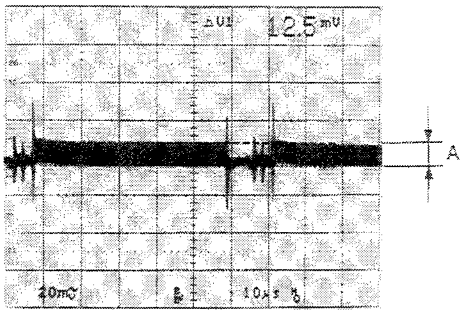
10-20. CONVERTER BALANCE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to test points (TPs).	TP501/CR-39 (B-3)  Minimize the A level. (A≦0.2 V)	● RV603/CR-39 (E-3) Trigger : TP302/VO-37A (A-5)

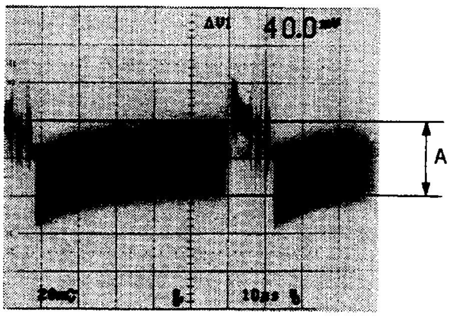
10-21. CROSSTALK CANCELLER ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : color bars signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • STOP (E-E) mode. • Connect the oscilloscope to test points (TPs). Oscilloscope • ADD • CH-2 : INV	CH-1 : TP501/CR-39 (B-3) CH-2 : TP502/CR-39 (B-3)   Minimize the A level. (A is geen level)	⊘RV501/CR-39 (A-3) ⊘RV502/CR-39 (A-3) • Adjust alternately. Trigger : TP301/VO-37A (C-5)

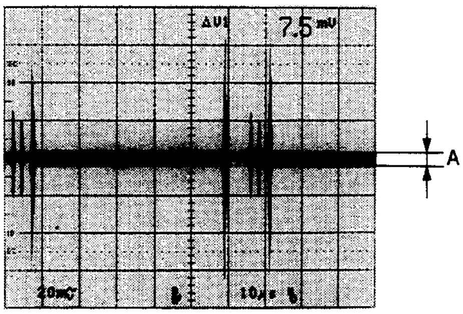
10-22. CPI ADJUSTMENT (1)

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : chroma noise signal • Insert a S-VHS blank tape. • STOP (E-E) mode • Connect the oscilloscope to test points (TPs).	TP801/CR-39 (B-1)  Minimize the A level. (A≦15 mV)	⊘CV801/CR-39 (C-2) ⊘RV801/CR-39 (B-2) • Adjust alternately. Trigger : TP301/VO-37A (C-5)

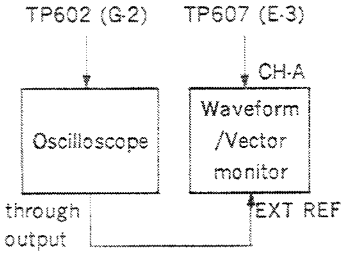
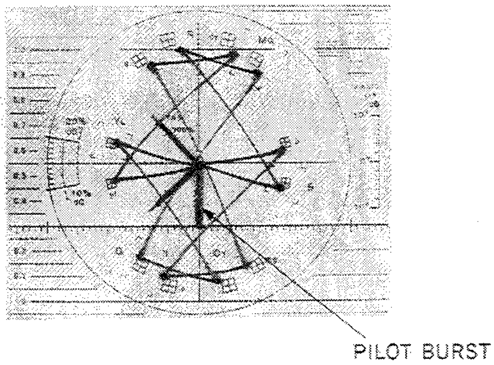
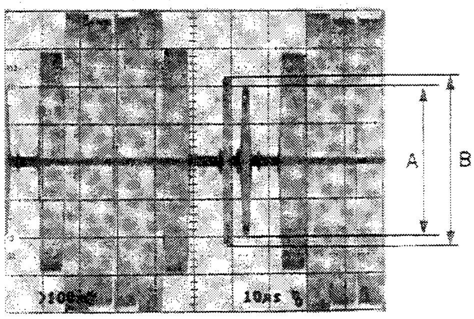
10-23. CPI ADJUSTMENT (2)

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : chroma noise signal • Insert a S-VHS blank tape. • STOP (E-E) mode • Connect the oscilloscope to test points (TPs).	TP820/CR-39 (B-1)  Minimize the A level. (A≦60 mV)	❶CV800/CR-39 (B-1) ❷RV800/CR-39 (B-1) • Adjust alternately. Trigger : TP301/VO-37A (C-5)

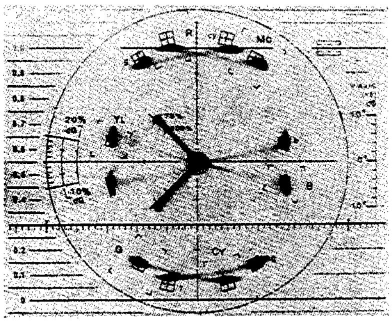
10-24. CPI ADJUSTMENT (3)

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : chroma noise signal • Insert a S-VHS blank tape. • STOP (E-E) mode • Connect between TP850/CR-39 (E-1) and TP851/CR-39 (E-1) on the CR-39 board with shorting clip. • Connect the oscilloscope to test points (TPs). • After the adjustment, remove the shorting clip.	TP870/CR-39 (E-1)  Minimize the A level. (A≦10 mV)	❶CV802/CR-39 (C-1) ❷RV802/CR-39 (C-2) • Adjust alternately. Trigger : TP301/VO-37A (C-5)

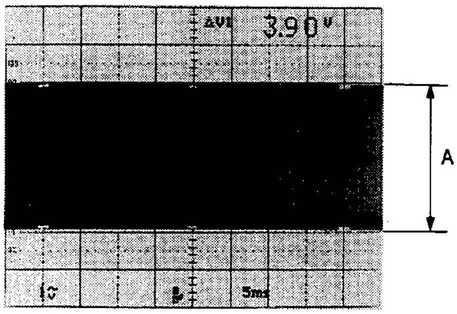
10-25. PILOT BURST ADJUSTMENT

Machine condition for adjustment	**Specifications**	**Adjustments**
- S-VIDEO IN : color bars signal - Insert a S-VHS blank tape. - Stop (E-E) mode - Connect between TP608/CR-39 (D-3) and E601/CR-39 (G-2) on the CR-39 board with shorting clip. - Connect the Waveform/Vector monitor and oscilloscope to test points (TPs) on the CR-39 board as follows :  TP602 (G-2) TP607 (E-3) CH-A Oscilloscope Waveform /Vector monitor through output EXT REF Waveform/Vector monitor - VECTOR - EXT REF - GAIN×5 - UNCAL	CH-A : TP607/CR-39 (E-3) EXT REF : TP602/CR-39 (G-2) (through the oscilloscope)  Adjust the CV602 so that the pilot burst dot coincide with regular position.	❷CV602/CR-39 (D-3)
- Connect the oscilloscope to test points (TPs). - After the adjustment, remove the shorting clip.	TP607/CR-39 (E-3)  $\frac{\text{B (Pilot burst leval)}}{\text{A (Burst level)}}=110\pm5\%$ (A is reference level.)	❸RV604/CR-39 (F-2) Trigger : TP602/CR-39 (G-2)

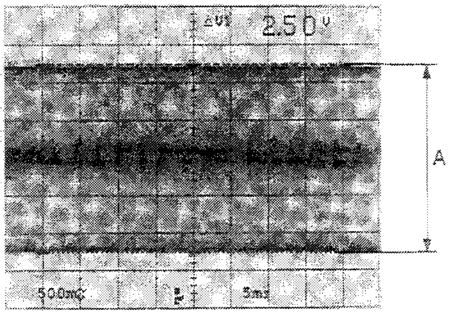
10-26. CNR IN CHROMA LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. Waveform/Vector monitor • VECTOR	VIDEO OUT connector (terminated with 75 Ω)  The luminous spot of burst shall be at 75% position on mark.	⊘RV860/CR-39 (E-1)

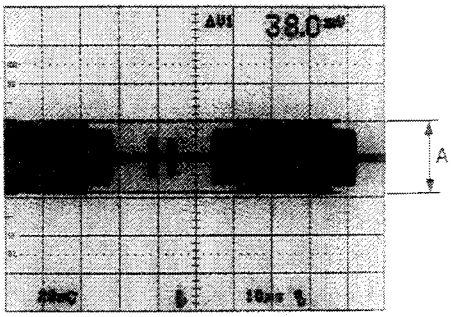
10-27. S-VHS Y REC CURRENT ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : 50% FLAT FIELD signal • Insert a S-VHS blank tape. • REC mode • Connect the oscilloscope to connector pins. (When using RP extension tool, connect the oscilloscope to TP terminals of VIDEO REC CURR. and SW'ING PULSE.)	CN804-3/RP-62A (C-1) (RP extension tool: VIDEO REC CURR terminal)  A=3.9±0.1 V p-p	⊘RV210/VO-37A (K-1) Trigger: CN804-5/RP-62A (C-1) (RP extension tool: SW'ING PULSE terminal)

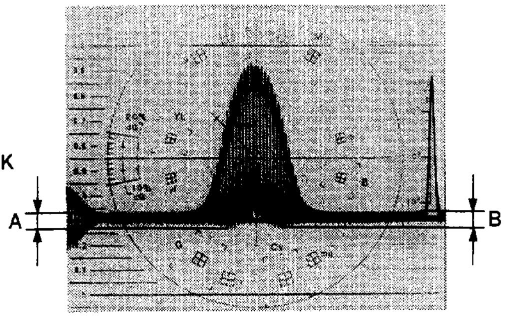
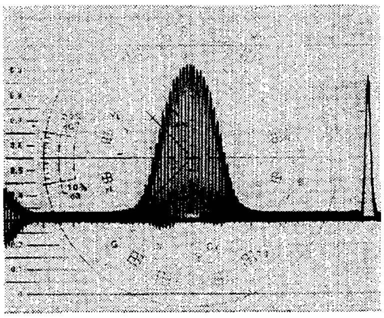
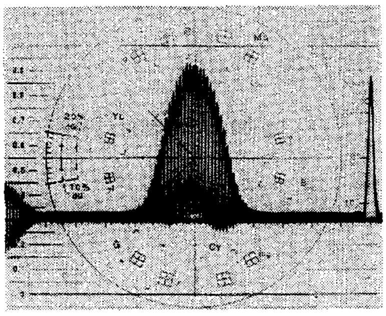
10-28. N-VHS Y REC CURRENT ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN : 50% FLAT FIELD signal • Insert a N-VHS blank tape. • REC mode • Connect the oscilloscope to connector pins. (When using RP extension tool, connect the oscilloscope to TP terminals of VIDEO REC CURR. and SW'ING PULSE.)	CN804-3/RP-62A (C-1) (RP extension tool : VIDEO REC CURR. terminal)  A=2.5±0.1 V p-p	◐RV211/VO-37A (L-1) Trigger : CN804-5/RP-62A (C-1) (RP extension tool : SW'ING PULSE terminal)

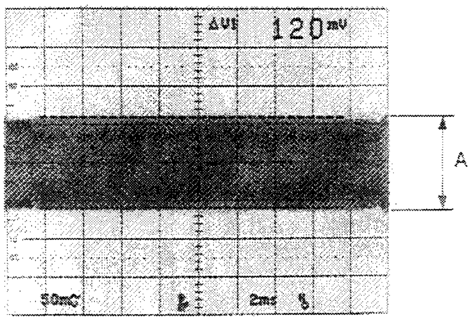
10-29. S-VHS CHROMA REC CURRENT ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : color bars signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • REC mode • Connect the oscilloscope to test points (TPs).	TP210/VO-37A (J-1)  A=38±2 mV p-p	◐RV260/VO-37A (K-1) Trigger : TP301/VO-37A (C-5)

10-30. OVERALL Y/C DELAY ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : pulse & bar signal • Perform the self-recording/playback with a S-VHS blank tape. Waveform/Vector monitor • WAVEFORM	VIDEO OUT connector (terminated with 75 Ω) OK  A=B (Modulation pulse part) NG  NG 	⊘RV601/CR-39(F-3)

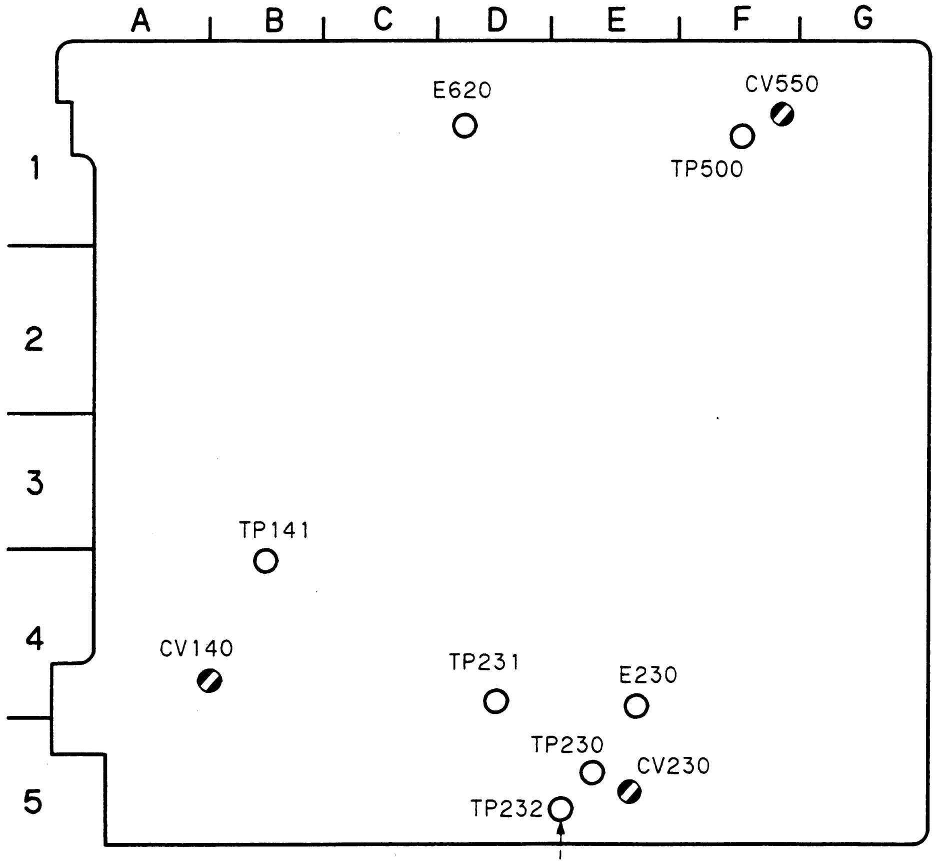
10-31. OVERALL Y RF LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to connector pins. (When using RP extension tool, connect the oscilloscope to TP terminals of VIDEO PB S-VHS RF and SW'ING PULSE.)	CN804-2/RP-62A (C-1) (RP extension tool: VIDEO PB S-VHS RF terminal)  A=120±20 mV p-p	⊘RV201/RP-62A (B-1) Trigger: CN804-5/RP-62A (C-1) (RP extension tool: SW'ING PULSE terminal)

10-32. VM BOARD CLOCK ADJUSTMENT

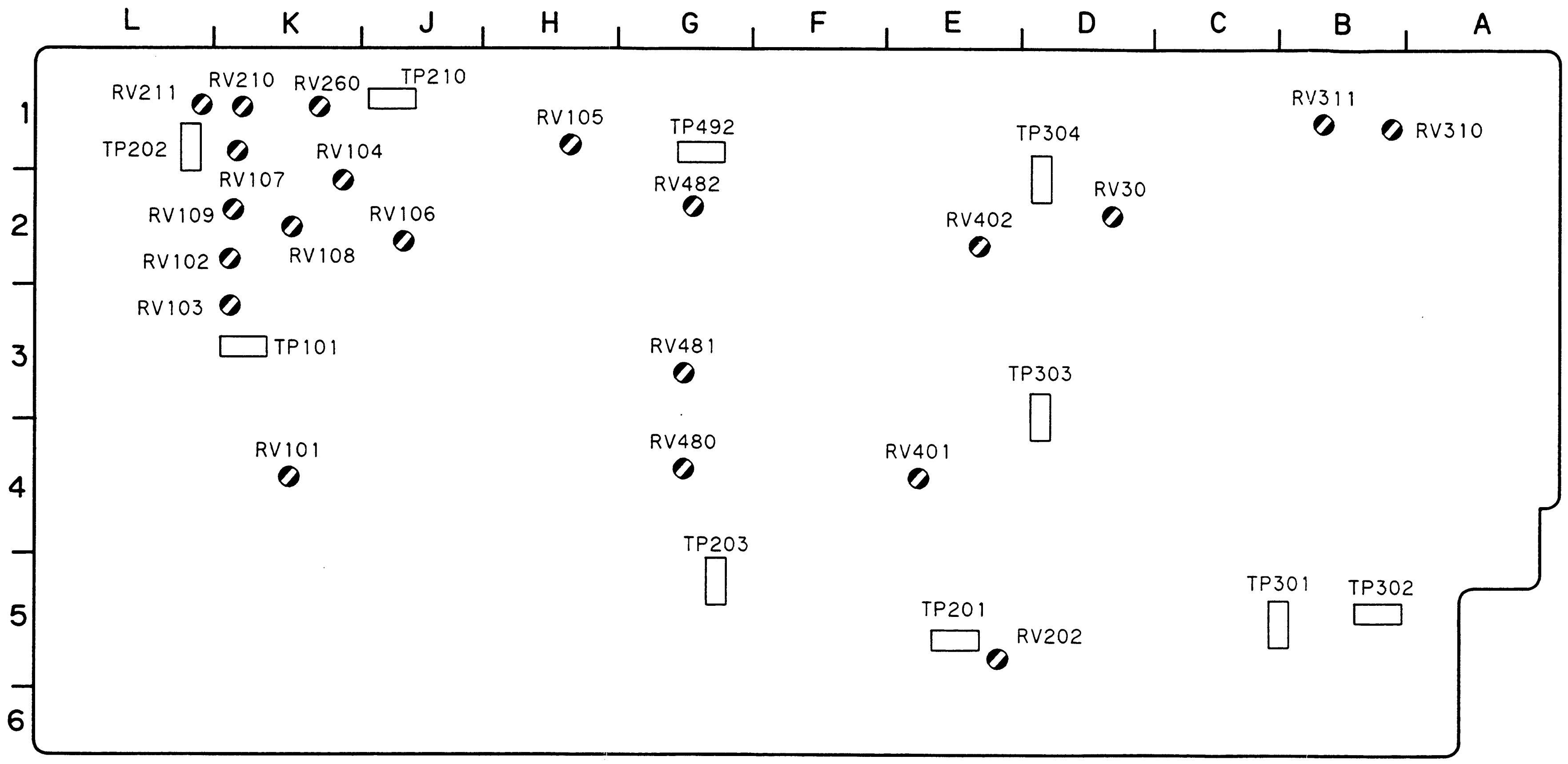
Machine condition for adjustment	Specifications	Adjustments
• S-VIDEO IN : no signal • Insert a S-VHS blank tape. • STOP (E-E) mode. • Connect the frequency counter to test points (TPs) and earth points (Es).	TP141/VM-12P (B-4) E230/VM-12P (E-4) 17.734475±0.000020 MHz	⊘CV140/VM-12P (A-4) (WRITE APC CLOCK)
	TP500/VM-12P (F-1) E620/VM-12P (D-1) 14.21875±0.00002 MHz	⊘CV550/VM-12P (F-1) (READ Y CLOCK)
	TP620/VM-12P (D-1) E620/VM-12P (D-1) 17.734475±0.000020 MHz	⊘CV620/VM-12P (E-1) (READ CHROMA CLOCK)
Only S/N 10001 thru 10280. • Connect the frequency counter to test point (TP) and earth point (E).	TP231/VM-12P (D-4) E230/VM-12P (E-4) 14.21875±0.05000 MHz	⊘CV230/VM-12P (E-5) (WRITE AFC CLOCK)
S/N 10281 and higher. • Connect between TP230/VM-12P (E-4) and TP232/VM-12P (D-5) on the VM-12P board with shorting clip. • Connect the frequency counter to test point (TP) and earth point (E). • After the adjutment, remove the shorting clip.	TP231/VM-12P (D-4) E230/VM-12P (E-4) 14.21875±0.05000 MHz	⊘CV230/VM-12P (E-5) (WRITE AFC CLOCK)

Location of CVs, Es and TPs on VM-12P board. (A side)

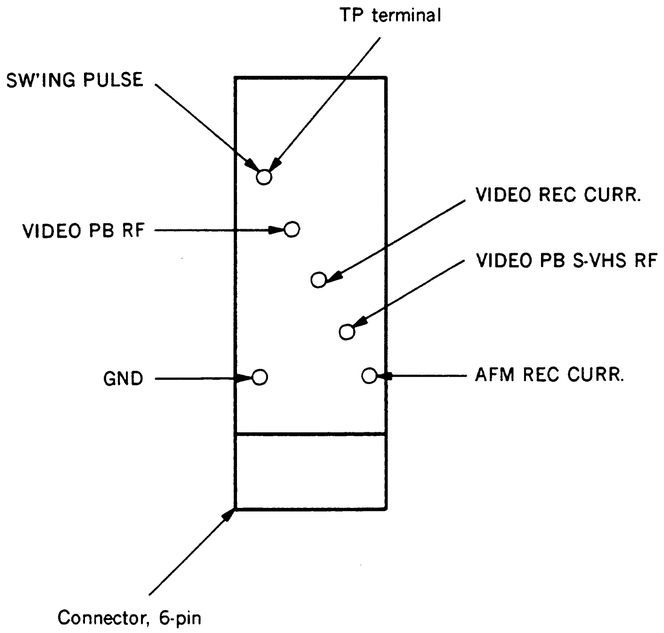

A
B
C
D
E
F
G
1
2
3
4
5
E620
CV550
TP500
TP141
CV140
TP231
E230
TP230
CV230
TP232

This TP232 is attached on the VM-12P board having the S/N 10281 and higher. However, for the board number 1-641-576-11 or 1-641-576-12, it should be noted that there is no marking of TP232.

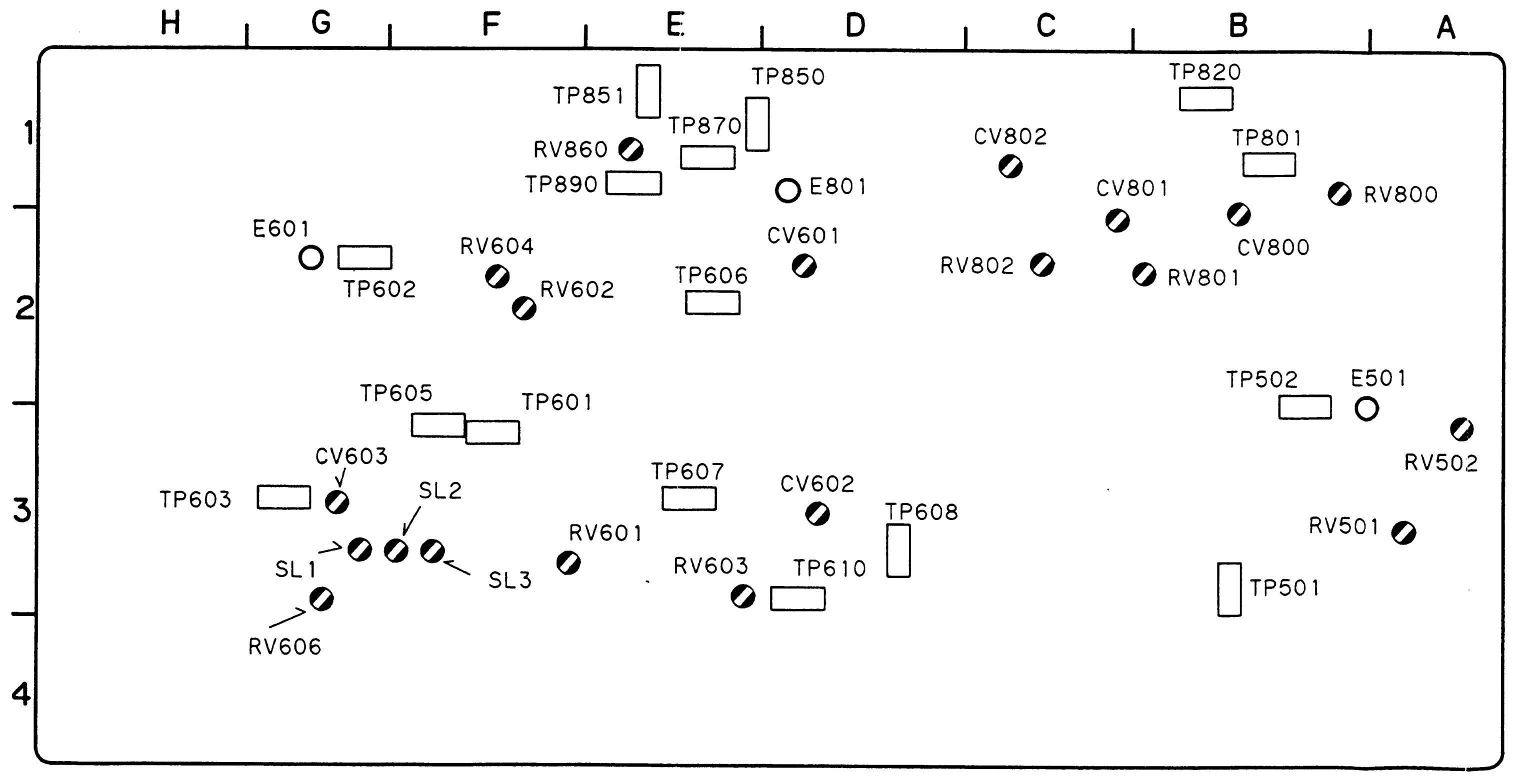
Location of RVs and TPs on VO-37A board. (B side)


L
K
J
H
G
F
E
D
C
B
A
1
2
3
4
5
6
RV211
RV210
RV260
TP210
TP202
RV104
RV107
RV109
RV106
RV108
RV102
RV103
TP101
RV101
RV105
TP492
RV482
RV481
RV480
TP203
TP304
RV30
RV402
TP303
RV401
TP201
RV202
RV311
RV310
TP301
TP302

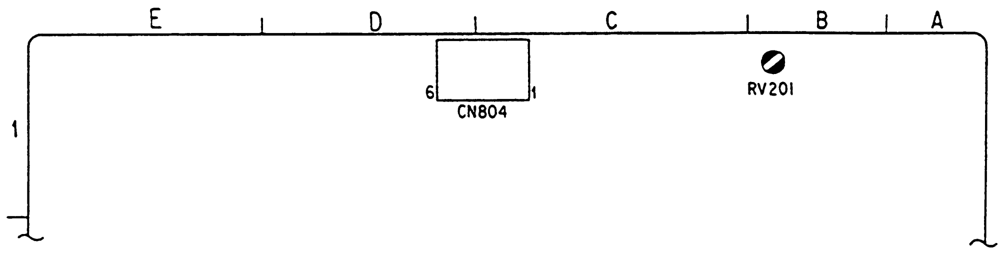
Location of TP terminals on RP extension tool


TP terminal
SW'ING PULSE
VIDEO PB RF
VIDEO REC CURR.
VIDEO PB S-VHS RF
GND
AFM REC CURR.
Connector, 6-pin

Location of CVs, Es, RVs and TPs on CR-39 board. (B side)

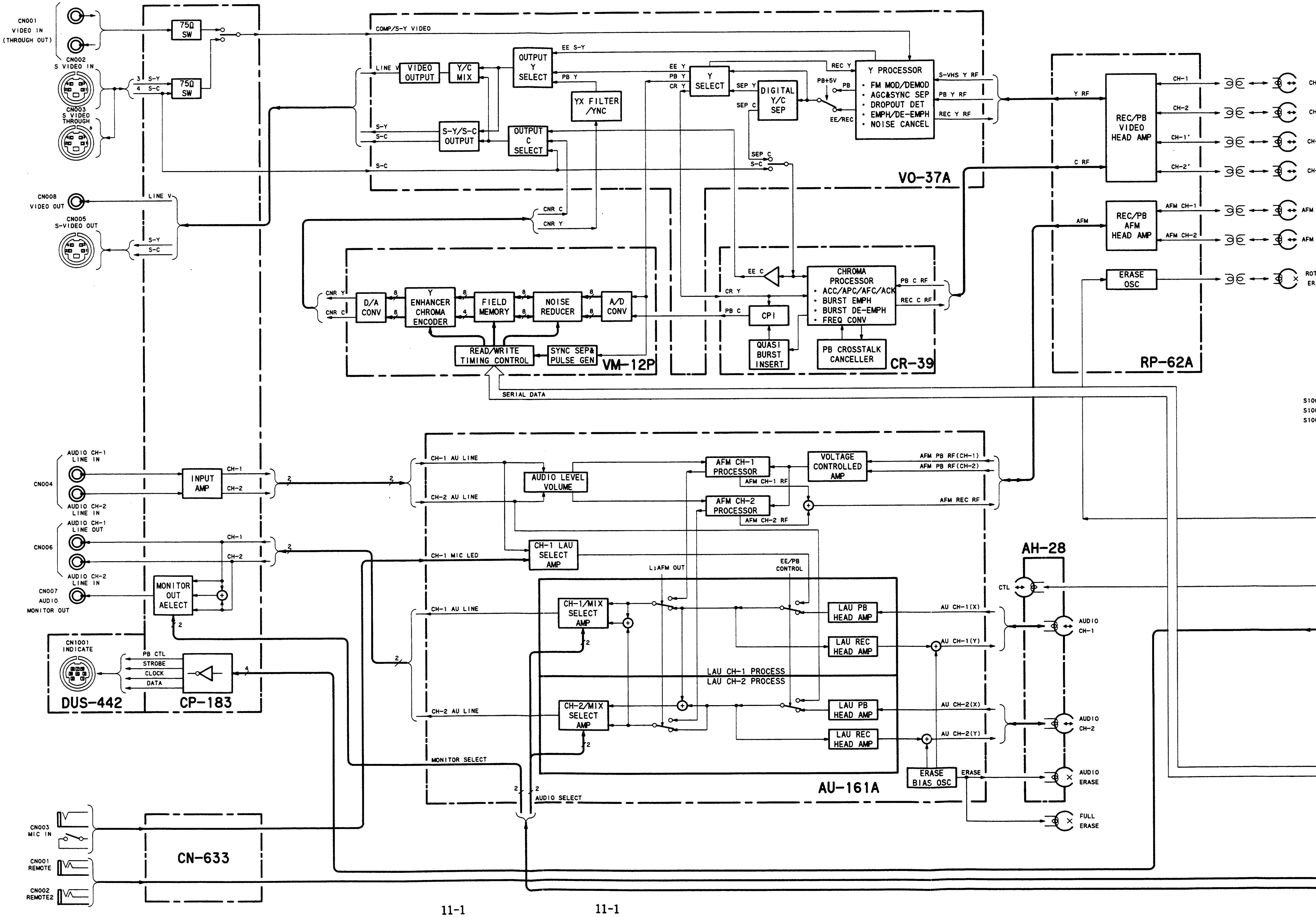

H
G
F
E
D
C
B
A
1
2
3
4
TP851
TP850
TP870
RV860
TP890
E801
CV802
TP820
TP801
CV801
RV800
CV800
E601
TP602
RV604
RV602
TP606
CV601
RV802
RV801
TP605
TP601
CV603
TP603
SL2
SL1
SL3
RV606
RV601
TP607
CV602
TP608
RV603
TP610
TP502
E501
RV502
RV501
TP501

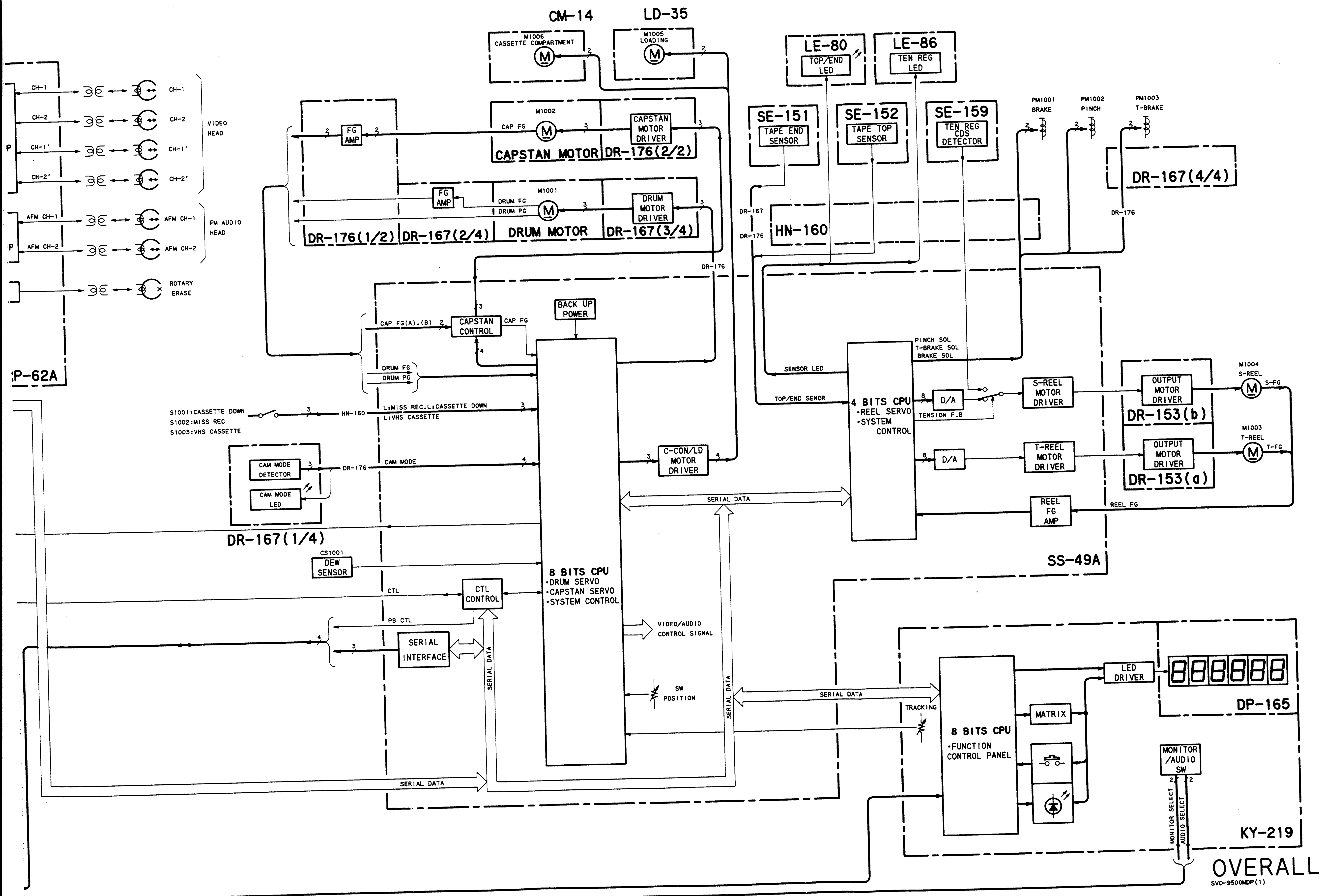
Location of CN and RV on RP-62A board. (A side)


E
D
C
B
A
1
6
1
CN804
RV201

SECTION 11
BLOCK DIAGRAMS

OVERALL


CN001
VIDEO IN
(THROUGH OUT)
CN002
S VIDEO IN
CN003
S VIDEO
THROUGH
CN008
VIDEO OUT
CN005
S-VIDEO OUT
75Ω SW
75Ω SW
S-Y
S-C
LINE V
COMP/S-Y VIDEO
LINE V
VIDEO OUTPUT
Y/C MIX
OUTPUT Y SELECT
EE S-Y
PB Y
YX FILTER /YNC
S-Y/S-C OUTPUT
OUTPUT C SELECT
EE Y
PB Y
CR Y
Y SELECT
SEP Y
SEP C
DIGITAL Y/C SEP
REC Y
PB+5V
PB
EE/REC
Y PROCESSOR
· FM MOD/DEMOD
· AGC&SYNC SEP
· DROPOUT DET
· EMPH/DE-EMPH
· NOISE CANCEL
S-VHS Y RF
PB Y RF
REC Y RF
SEP C
S-C
VO-37A
CNR C
CNR Y
CNR Y
CNR C
D/A CONV
Y ENHANCER CHROMA ENCODER
FIELD MEMORY
NOISE REDUCER
A/D CONV
8
4
READ/WRITE TIMING CONTROL
SYNC SEP& PULSE GEN
VM-12P
SERIAL DATA
EE C
CR Y
PB C
CPI
QUASI BURST INSERT
CHROMA PROCESSOR
· ACC/APC/AFC/ACK
· BURST EMPH
· BURST DE-EMPH
· FREQ CONV
PB C RF
REC C RF
PB CROSSTALK CANCELLER
CR-39
Y RF
C RF
AFM
REC/PB VIDEO HEAD AMP
REC/PB AFM HEAD AMP
ERASE OSC
CH-1
CH-2
CH-1'
CH-2'
AFM CH-1
AFM CH-2
RP-62A
AUDIO CH-1 LINE IN
CN004
AUDIO CH-2 LINE IN
AUDIO CH-1 LINE OUT
CN006
AUDIO CH-2 LINE IN
CN007
AUDIO
MONITOR OUT
INPUT AMP
CH-1
CH-2
MONITOR OUT AELECT
CN1001
INDICATE
PB CTL
STROBE
CLOCK
DATA
DUS-442
CP-183
CH-1 AU LINE
CH-2 AU LINE
AUDIO LEVEL VOLUME
AFM CH-1 PROCESSOR
AFM CH-1 RF
AFM CH-2 PROCESSOR
AFM CH-2 RF
VOLTAGE CONTROLLED AMP
AFM PB RF(CH-1)
AFM PB RF(CH-2)
AFM REC RF
CH-1 MIC LED
CH-1 LAU SELECT AMP
L:AFM OUT
EE/PB CONTROL
CH-1 AU LINE
CH-1/MIX SELECT AMP
LAU PB HEAD AMP
LAU REC HEAD AMP
AU CH-1(X)
AU CH-1(Y)
LAU CH-1 PROCESS
LAU CH-2 PROCESS
CH-2 AU LINE
CH-2/MIX SELECT AMP
LAU PB HEAD AMP
LAU REC HEAD AMP
AU CH-2(X)
AU CH-2(Y)
MONITOR SELECT
AUDIO SELECT
ERASE BIAS OSC
ERASE
AU-161A
AH-28
CTL
AUDIO CH-1
AUDIO CH-2
AUDIO ERASE
FULL ERASE
CN003
MIC IN
CN001
REMOTE
CN002
REMOTE2
CN-633


CM-14
M1006
CASSETTE COMPARTMENT
LD-35
M1005
LOADING
LE-80
TOP/END LED
LE-86
TEN REG LED
SE-151
TAPE END SENSOR
SE-152
TAPE TOP SENSOR
SE-159
TEN REG CDS DETECTOR
PM1001
BRAKE
PM1002
PINCH
PM1003
T-BRAKE
DR-167(4/4)
DR-176
CH-1
CH-2
CH-1'
CH-2'
VIDEO HEAD
AFM CH-1
AFM CH-2
FM AUDIO HEAD
ROTARY ERASE
P-62A
P
FG AMP
M1002
CAP FG
CAPSTAN MOTOR DRIVER
CAPSTAN MOTOR
DR-176(2/2)
M1001
DRUM FG
DRUM PG
DRUM MOTOR DRIVER
DR-176(1/2)
DR-167(2/4)
DRUM MOTOR
DR-167(3/4)
DR-167
DR-176
HN-160
CAP FG(A).(B)
CAPSTAN CONTROL
CAP FG
BACK UP POWER
S1001:CASSETTE DOWN
S1002:MISS REC
S1003:VHS CASSETTE
HN-160
L:MISS REC.L:CASSETTE DOWN
L:VHS CASSETTE
CAM MODE DETECTOR
CAM MODE LED
DR-176
CAM MODE
C-CON/LD MOTOR DRIVER
SERIAL DATA
DR-167(1/4)
CS1001
DEW SENSOR
CTL
CTL CONTROL
8 BITS CPU
·DRUM SERVO
·CAPSTAN SERVO
·SYSTEM CONTROL
PB CTL
SERIAL INTERFACE
VIDEO/AUDIO CONTROL SIGNAL
SW POSITION
SERIAL DATA
SENSOR LED
TOP/END SENOR
PINCH SOL
T-BRAKE SOL
BRAKE SOL
4 BITS CPU
·REEL SERVO
·SYSTEM CONTROL
TENSION F.B
D/A
S-REEL MOTOR DRIVER
OUTPUT MOTOR DRIVER
DR-153(b)
M1004
S-REEL
S-FG
T-REEL MOTOR DRIVER
DR-153(a)
M1003
T-REEL
T-FG
REEL FG AMP
REEL FG
SS-49A
TRACKING
8 BITS CPU
·FUNCTION CONTROL PANEL
MATRIX
LED DRIVER
888888
DP-165
MONITOR /AUDIO SW
MONITOR SELECT
AUDIO SELECT
KY-219

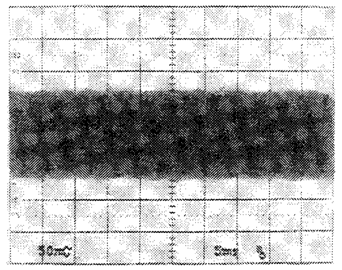
OVERALL

SVO-9500MDP(1)

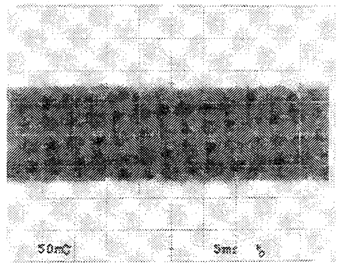
VIDEO & AFM HEAD AMP

Note : The mentioned items at waveform photograph of this section are measurement point, board location, and machine operation mode.

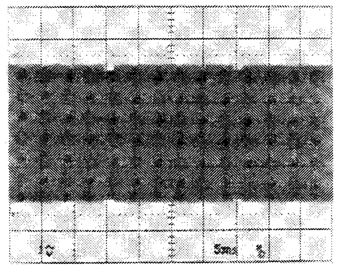
① CN804 pin 1 (C-1) REC mode



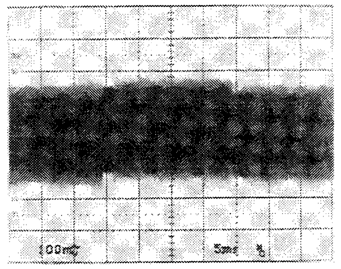
② CN804 pin 2 (C-1) PB mode (S)
CN804 pin 5 (C-1) (TRIG)



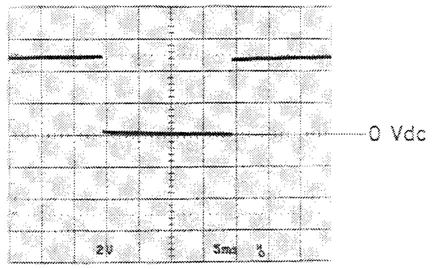
③ CN804 pin 3 (C-1) REC mode
CN804 pin 5 (C-1) (TRIG)



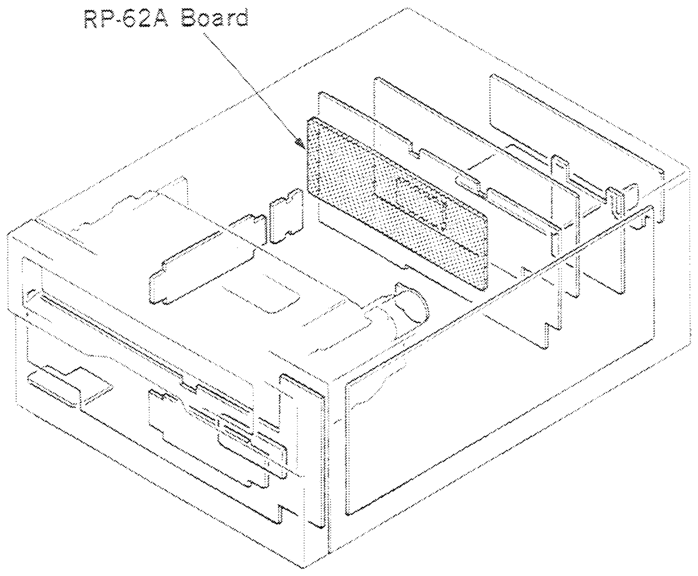
④ CN804 pin 4 (C-1) PB mode (N)
CN804 pin 5 (C-1) (TRIG)

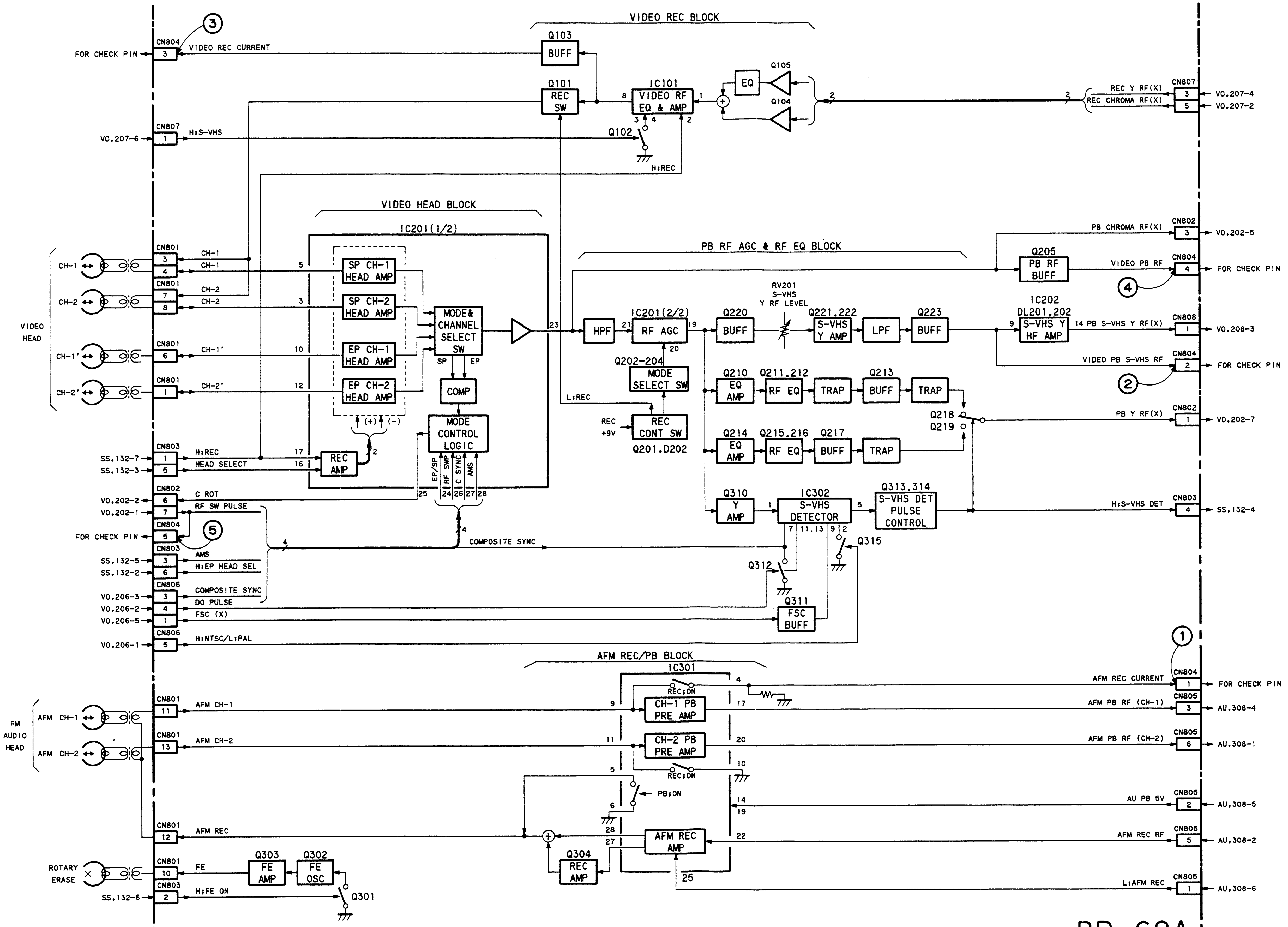


⑤ CN804 pin 5 (C-1) REC/PB mode



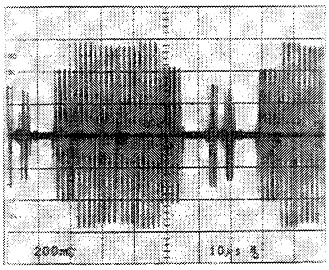
Measurement Condition
S-VIDEO IN : 75% color bars
REC mode : S-VHS
PB mode (S) : KRV-45HPS
PB mode (N) : KRV-45PS



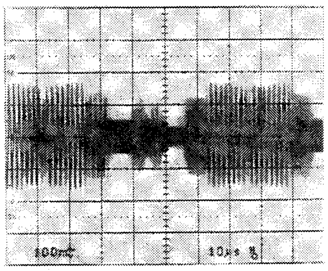

VIDEO REC BLOCK
FOR CHECK PIN
CN804
3
③
VIDEO REC CURRENT
Q103
BUFF
Q101
REC SW
IC101
VIDEO RF EQ & AMP
8
1
3
4
2
EQ
Q105
Q104
Q102
H;REC
REC Y RF(X)
REC CHROMA RF(X)
CN807
3
5
VO.207-4
VO.207-2
VO.207-6
CN807
1
H;S-VHS
VIDEO HEAD BLOCK
IC201(1/2)
CN801
CH-1
CH-1
CH-2
CH-2
CH-1'
CH-2'
VIDEO HEAD
SP CH-1 HEAD AMP
SP CH-2 HEAD AMP
EP CH-1 HEAD AMP
EP CH-2 HEAD AMP
MODE& CHANNEL SELECT SW
SP
EP
COMP
MODE CONTROL LOGIC
(+)
(-)
REC AMP
EP/SP
RF SWP
C SYNC
AMS
25
24
26
27
28
23
CN803
SS.132-7
SS.132-3
H;REC
HEAD SELECT
17
16
CN802
VO.202-2
VO.202-1
C ROT
RF SW PULSE
FOR CHECK PIN
CN804
5
⑤
SS.132-5
SS.132-2
AMS
H;EP HEAD SEL
CN806
VO.206-3
VO.206-2
VO.206-5
COMPOSITE SYNC
DO PULSE
FSC (X)
VO.206-1
H;NTSC/L;PAL
COMPOSITE SYNC
PB RF AGC & RF EQ BLOCK
HPF
IC201(2/2)
RF AGC
21
19
20
Q202-204
MODE SELECT SW
L;REC
REC +9V
REC CONT SW
Q201,D202
Q220
BUFF
RV201 S-VHS Y RF LEVEL
Q221,222
S-VHS Y AMP
LPF
Q223
BUFF
IC202 DL201,202
S-VHS Y HF AMP
14 PB S-VHS Y RF(X)
CN808
VO.208-3
Q205
PB RF BUFF
PB CHROMA RF(X)
CN802
VO.202-5
VIDEO PB RF
CN804
4
FOR CHECK PIN
④
VIDEO PB S-VHS RF
CN804
2
FOR CHECK PIN
②
Q210
EQ AMP
Q211,212
RF EQ
TRAP
Q213
BUFF
TRAP
Q214
EQ AMP
Q215,216
RF EQ
Q217
BUFF
TRAP
Q218
Q219
PB Y RF(X)
CN802
VO.202-7
Q310
Y AMP
IC302
S-VHS DETECTOR
7
11,13
9
2
5
Q313,314
S-VHS DET PULSE CONTROL
H;S-VHS DET
CN803
SS.132-4
Q312
Q315
Q311
FSC BUFF
AFM REC/PB BLOCK
IC301
REC;ON
CH-1 PB PRE AMP
CH-2 PB PRE AMP
REC;ON
PB;ON
AFM REC AMP
Q304
REC AMP
①
AFM REC CURRENT
CN804
1
FOR CHECK PIN
AFM PB RF (CH-1)
CN805
AU.308-4
AFM PB RF (CH-2)
AU.308-1
AU PB 5V
AU.308-5
AFM REC RF
AU.308-2
L;AFM REC
AU.308-6
FM AUDIO HEAD
AFM CH-1
AFM CH-2
CN801
11
13
12
AFM REC
ROTARY ERASE
10
FE
Q303
FE AMP
Q302
FE OSC
Q301
CN803
SS.132-6
H;FE ON

RP-62A
SVO-9500MDP(1)

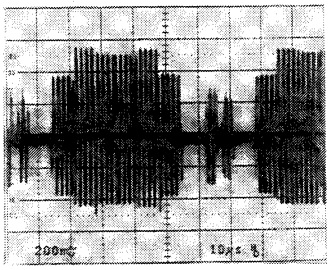
① TP607 (E-3*) STOP (E-E) mode



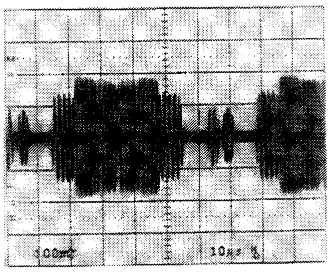
TP607 (E-3*) PB mode



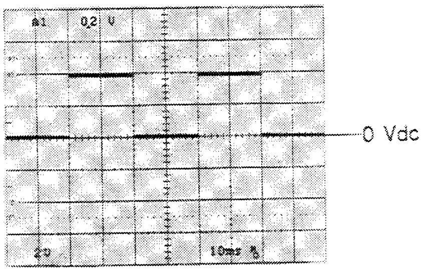
② TP601 (F-3*) STOP (E-E) mode



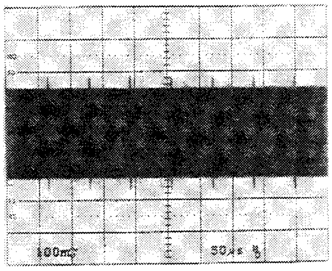
TP601 (F-3*) PB mode



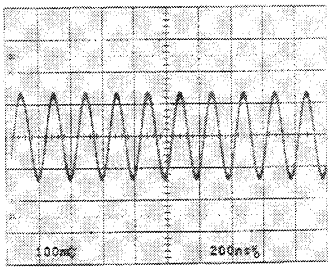
③ TP610 (G-3*) REC/PB mode



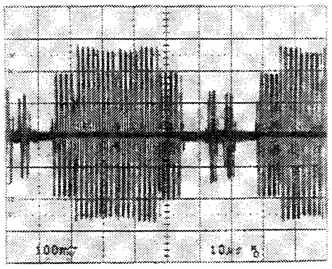
④ TP608 (D-3*)



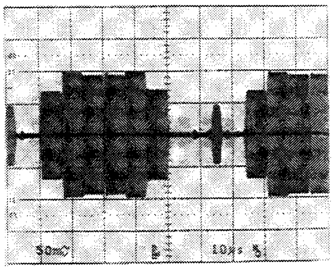
TP608 (D-3*) (fsc part)



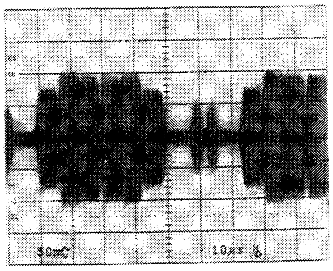
⑤ TP603 (G-3*) STOP (E-E) mode



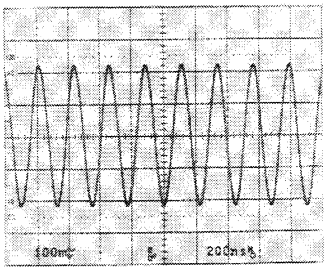
⑥ TP605 (F-3*) STOP (E-E) mode



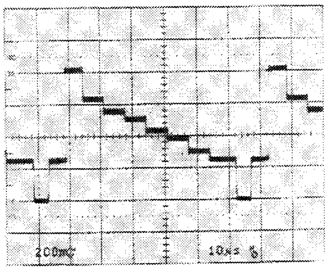
TP605 (F-3*) PB mode



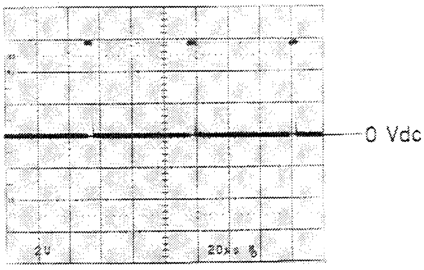
⑦ TP602 (F-2*)



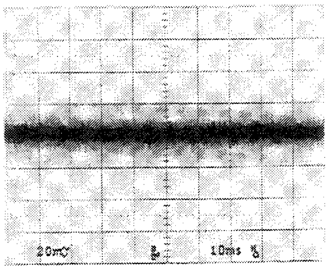
⑧ CN212 pin 18 (H-2*)
STOP (E-E) mode



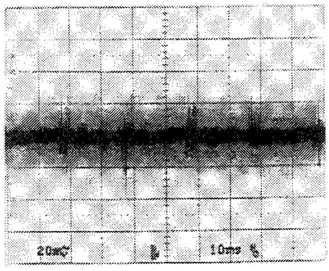
⑨ IC604 pin 4 (A-2*)



⑩ TP606 (E-2*) STOP (E-E) mode

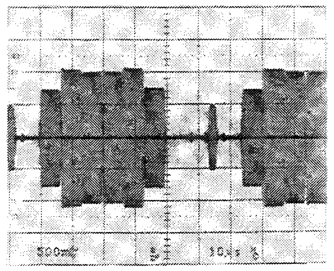


TP606 (E-2*) PB mode

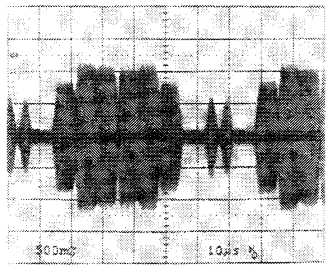


CHROMA PROCESS

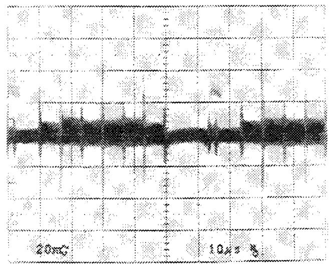
⑪ TP501 (B-3*) STOP (E-E) mode
TP502 (B-2*) STOP (E-E) mode



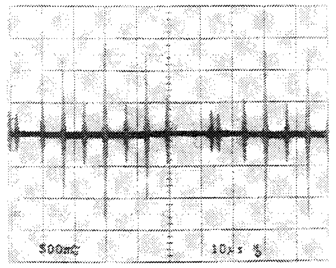
TP501 (B-3*) PB mode
TP502 (B-2*) PB mode



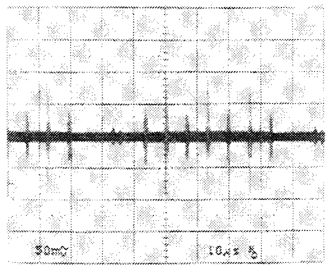
⑫ TP801 (B-1*) STOP (E-E) mode



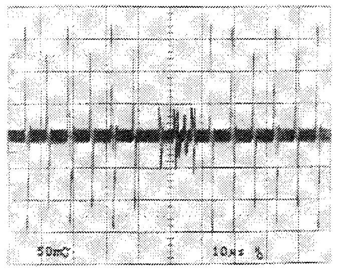
⑬ TP820 (B-1*) STOP (E-E) mode



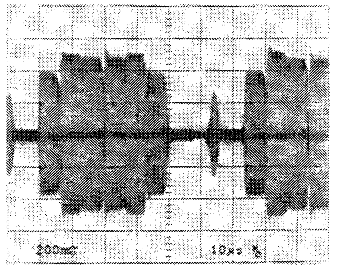
⑭ TP870 (E-1*) STOP (E-E) mode



⑮ TP850 (E-1*) STOP (E-E) mode

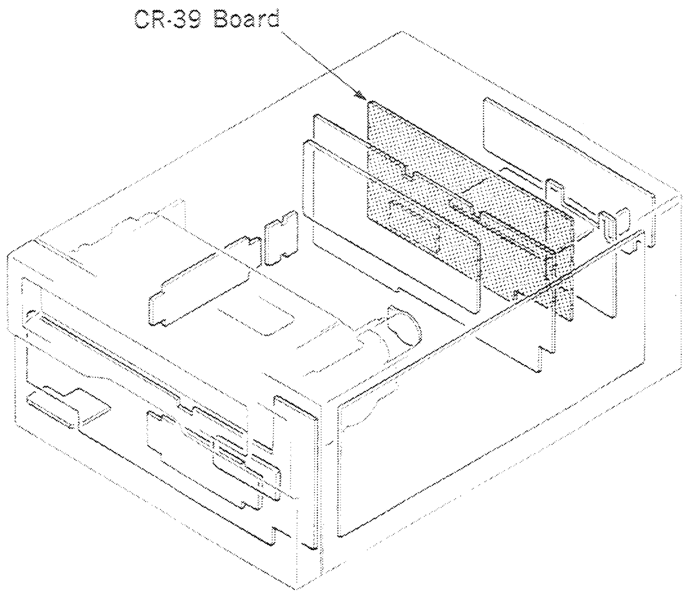


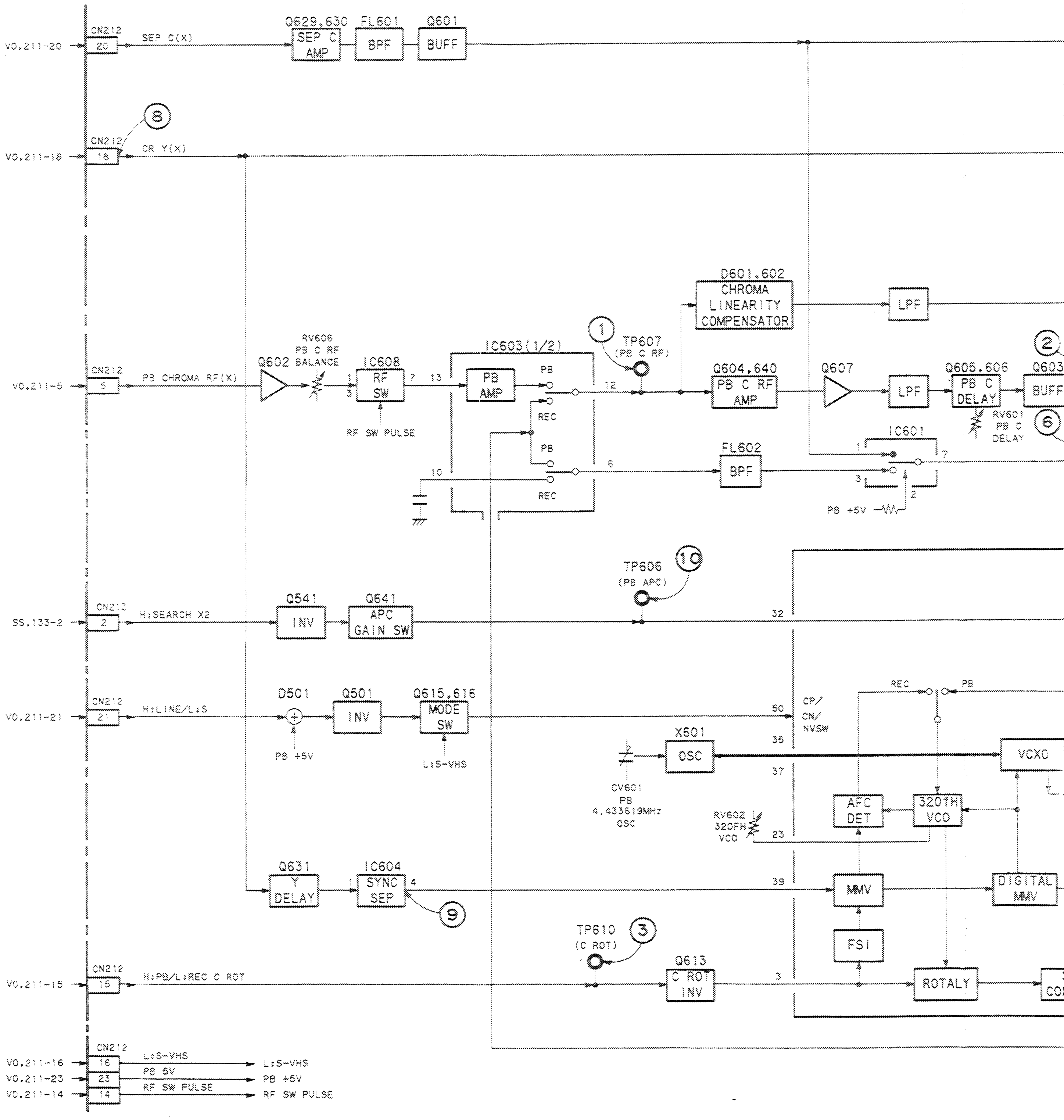
⑯ TP890 (E-1*) PB mode

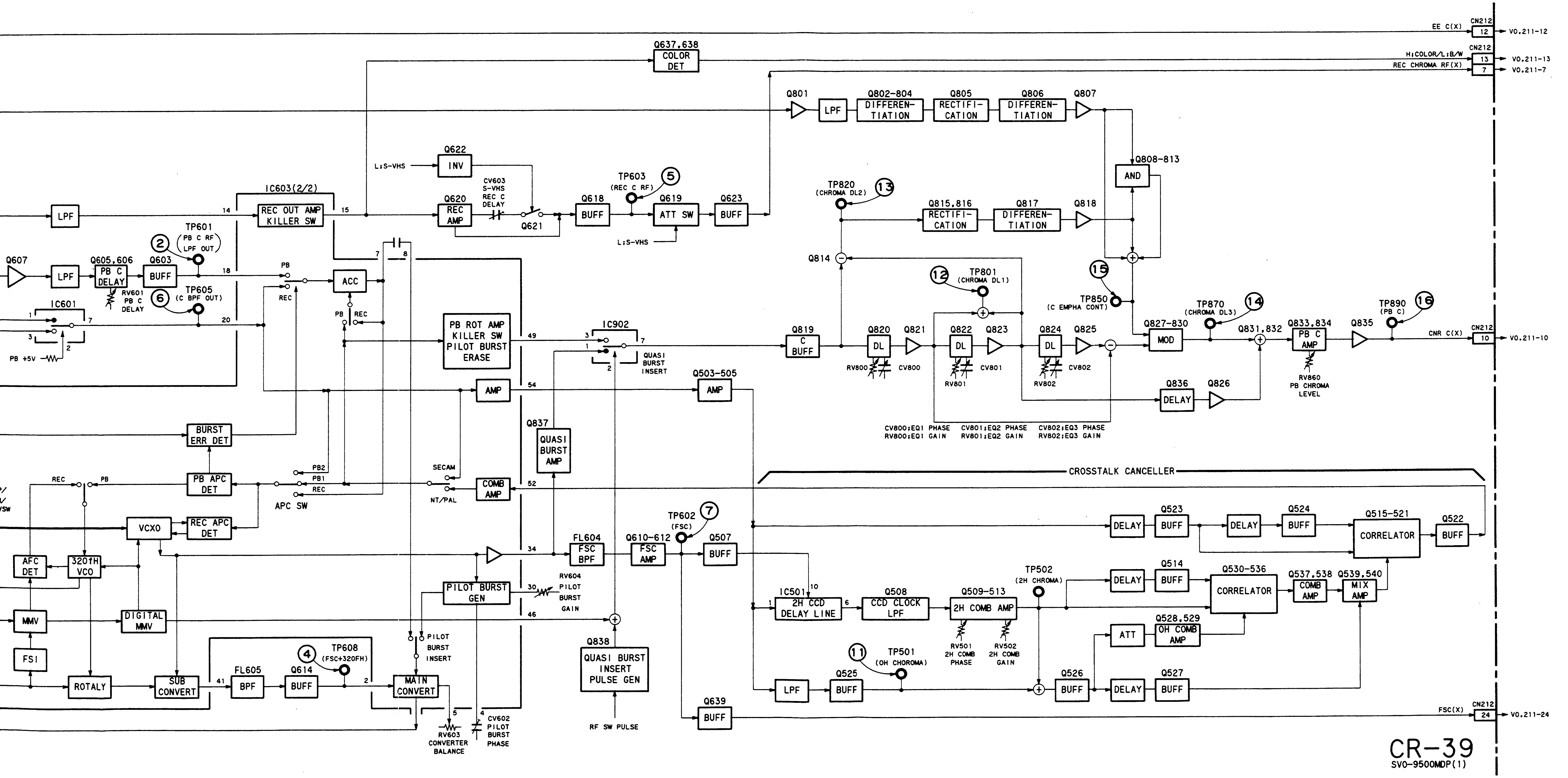


Measurement Condition
S-VIDEO IN: 75% color bars
STOP (E-E) mode: S-VHS
REC mode: S-VHS
PB mode: KRV-45HPS

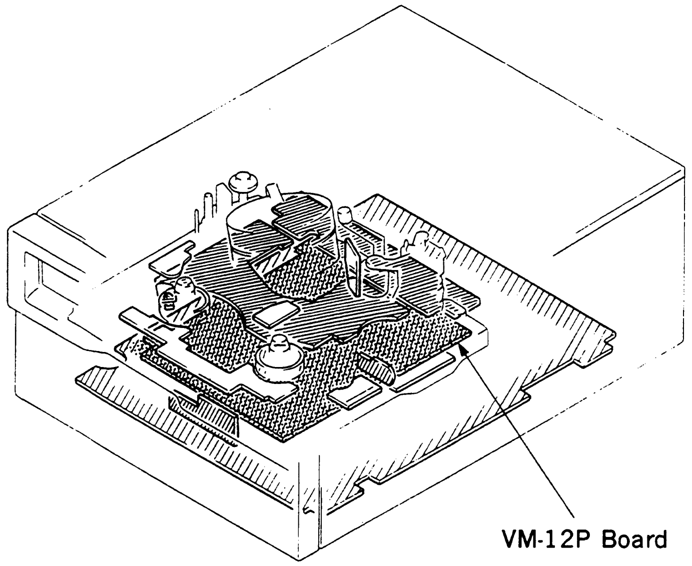
* mark; B SIDE mount

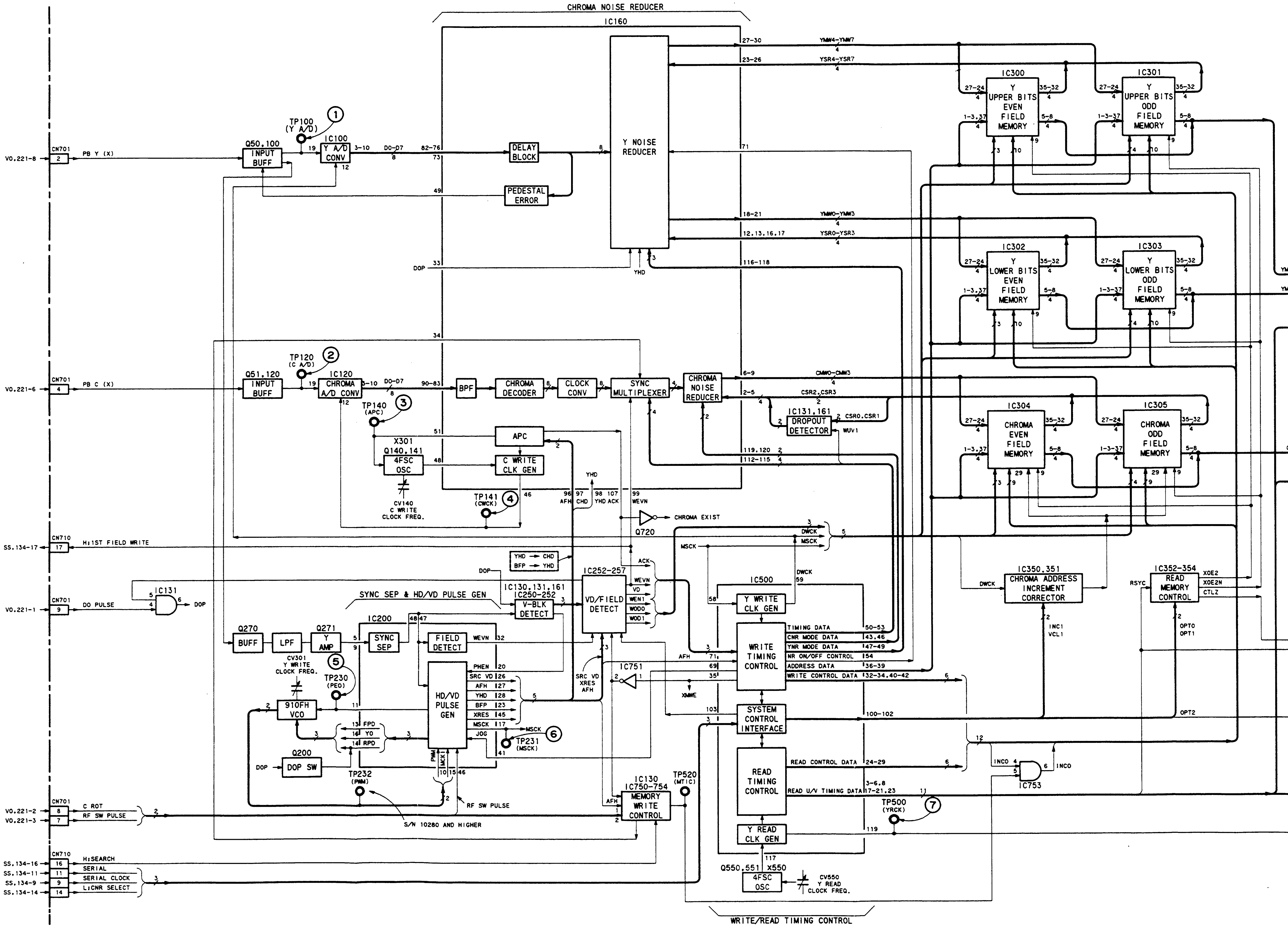


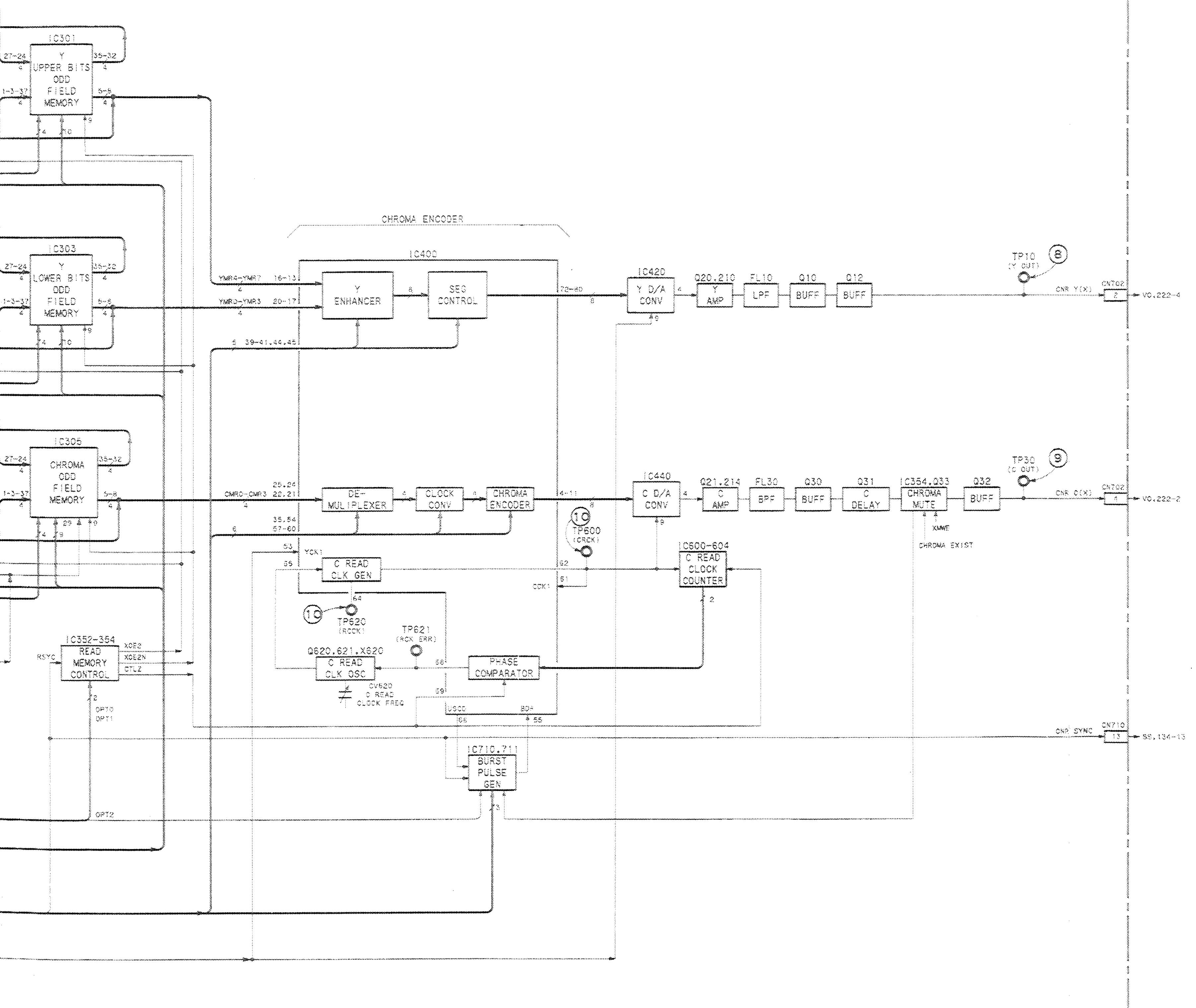

VO.211-20
CN212
20
SEP C(X)
Q629,630
SEP C AMP
FL601
BPF
Q601
BUFF
⑧
VO.211-18
CN212
18
CR Y(X)
D601,602
CHROMA LINEARITY COMPENSATOR
LPF
VO.211-5
CN212
5
PB CHROMA RF(X)
Q602
RV606
PB C RF
BALANCE
IC608
RF SW
RF SW PULSE
IC603(1/2)
PB AMP
PB
REC
PB
REC
①
TP607
(PB C RF)
Q604,640
PB C RF AMP
Q607
LPF
Q605,606
PB C DELAY
RV601
PB C
DELAY
Q603
BUFF
②
⑥
FL602
BPF
IC601
PB +5V
TP606
(PB APC)
⑩
SS.133-2
CN212
2
H:SEARCH X2
Q541
INV
Q641
APC GAIN SW
VO.211-21
CN212
21
H:LINE/L:S
D501
PB +5V
Q501
INV
Q615,616
MODE SW
L:S-VHS
CP/
CN/
NVSW
REC
PB
X601
OSC
CV601
PB
4.433619MHz
OSC
VCXO
AFC DET
320fH VCO
RV602
320FH
VCO
Q631
Y DELAY
IC604
SYNC SEP
⑨
MMV
DIGITAL MMV
FSI
TP610
(C ROT)
③
VO.211-15
CN212
15
H:PB/L:REC C ROT
Q613
C ROT INV
ROTALY
CN212
VO.211-16
16
L:S-VHS
L:S-VHS
VO.211-23
23
PB 5V
PB +5V
VO.211-14
14
RF SW PULSE
RF SW PULSE


EE C(X)
CN212 12
VO.211-12
CN212 13
H:COLOR/L:B/W
VO.211-13
REC CHROMA RF(X)
7
VO.211-7
Q637,638
COLOR DET
Q801
LPF
Q802-804
DIFFEREN-TIATION
Q805
RECTIFI-CATION
Q806
DIFFEREN-TIATION
Q807
Q808-813
AND
L:S-VHS
Q622
INV
CV603
S-VHS
REC C
DELAY
Q620
REC AMP
Q621
TP603
(REC C RF)
⑤
Q618
BUFF
Q619
ATT SW
Q623
BUFF
L:S-VHS
TP820
(CHROMA DL2)
⑬
Q815,816
RECTIFI-CATION
Q817
DIFFEREN-TIATION
Q818
IC603(2/2)
REC OUT AMP
KILLER SW
14
15
LPF
TP601
(PB C RF
LPF OUT)
②
Q607
LPF
Q605,606
PB C DELAY
Q603
BUFF
18
RV601
PB C
DELAY
TP605
⑥
(C BPF OUT)
PB
REC
ACC
7
8
IC601
1
3
7
2
20
PB +5V
PB
REC
PB ROT AMP
KILLER SW
PILOT BURST
ERASE
49
IC902
3
1
7
2
QUASI
BURST
INSERT
Q814
TP801
(CHROMA DL1)
⑫
⑮
TP850
(C EMPHA CONT)
Q819
C BUFF
Q820
DL
Q821
Q822
DL
Q823
Q824
DL
Q825
RV800
CV800
RV801
CV801
RV802
CV802
Q827-830
MOD
TP870
(CHROMA DL3)
⑭
Q831,832
Q833,834
PB C AMP
RV860
PB CHROMA
LEVEL
Q835
TP890
(PB C)
⑯
CNR C(X)
CN212 10
VO.211-10
AMP
54
Q503-505
AMP
Q836
DELAY
Q826
CV800:EQ1 PHASE
RV800:EQ1 GAIN
CV801:EQ2 PHASE
RV801:EQ2 GAIN
CV802:EQ3 PHASE
RV802:EQ3 GAIN
BURST ERR DET
Q837
QUASI BURST AMP
CROSSTALK CANCELLER
REC
PB
PB APC DET
PB2
PB1
REC
APC SW
SECAM
NT/PAL
COMB AMP
52
VCXO
REC APC DET
TP602
(FSC)
⑦
Q523
DELAY
BUFF
Q524
DELAY
BUFF
Q515-521
CORRELATOR
Q522
BUFF
AFC DET
320fH VCO
34
FL604
FSC BPF
Q610-612
FSC AMP
Q507
BUFF
TP502
(2H CHROMA)
Q514
DELAY
BUFF
Q530-536
CORRELATOR
Q537,538
COMB AMP
Q539,540
MIX AMP
PILOT BURST GEN
30
RV604
PILOT
BURST
GAIN
46
IC501
10
1
2H CCD
DELAY LINE
6
Q508
CCD CLOCK LPF
Q509-513
2H COMB AMP
RV501
2H COMB
PHASE
RV502
2H COMB
GAIN
Q528,529
ATT
OH COMB AMP
MMV
DIGITAL MMV
FSI
PILOT
BURST
INSERT
Q838
QUASI BURST
INSERT
PULSE GEN
⑪
TP501
(OH CHOROMA)
ROTALY
SUB CONVERT
41
FL605
BPF
④
TP608
(FSC+320FH)
Q614
BUFF
2
MAIN CONVERT
5
4
RV603
CONVERTER
BALANCE
CV602
PILOT
BURST
PHASE
RF SW PULSE
LPF
Q525
BUFF
Q526
BUFF
DELAY
Q527
BUFF
Q639
BUFF
FSC(X)
CN212 24
VO.211-24
CR-39
SVO-9500MDP(1)

CHROMA NOISE REDUCER

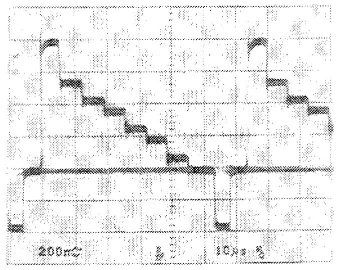

VM-12P Board


CHROMA NOISE REDUCER
IC160
TP100 (Y A/D) ①
Q50,100 INPUT BUFF
IC100 Y A/D CONV
D0-D7
DELAY BLOCK
PEDESTAL ERROR
Y NOISE REDUCER
YHD
DOP
TP120 (C A/D) ②
Q51,120 INPUT BUFF
IC120 CHROMA A/D CONV
TP140 (APC) ③
BPF
CHROMA DECODER
CLOCK CONV
SYNC MULTIPLEXER
CHROMA NOISE REDUCER
APC
C WRITE CLK GEN
X301 Q140,141 4FSC OSC
CV140 C WRITE CLOCK FREQ.
TP141 (CWCK) ④
IC131,161 DROPOUT DETECTOR
Q720
CHROMA EXIST
CN701 VO.221-8 2 PB Y (X)
CN701 VO.221-6 4 PB C (X)
CN710 SS.134-17 17 H:1ST FIELD WRITE
CN701 VO.221-1 9 DO PULSE
IC131
YHD → CHD
BFP → YHD
IC130,131,161 IC250-252 V-BLK DETECT
IC252-257 VD/FIELD DETECT
WEVN WEN1 WODO WOD1 ACK
SYNC SEP & HD/VD PULSE GEN
Q270 BUFF
LPF
Q271 Y AMP
IC200 SYNC SEP
FIELD DETECT
HD/VD PULSE GEN
PHEN SRC VD AFH YHD BFP XRES MSCK JOG
CV301 Y WRITE CLOCK FREQ.
TP230 (PEO) ⑤
910FH VCO
FPD YO RPD
Q200 DOP SW
TP231 (MSCK) ⑥
TP232 (PWM)
S/N 10280 AND HIGHER
RF SW PULSE
CN701 VO.221-2 8 C ROT
VO.221-3 7 RF SW PULSE
CN710 SS.134-16 16 H:SEARCH
SS.134-11 11 SERIAL
SS.134-9 9 SERIAL CLOCK
SS.134-14 14 L:CNR SELECT
IC751
IC130 IC750-754 MEMORY WRITE CONTROL
TP520 (MTIC)
IC500 Y WRITE CLK GEN
WRITE TIMING CONTROL
TIMING DATA
CNR MODE DATA
YNR MODE DATA
NR ON/OFF CONTROL
ADDRESS DATA
WRITE CONTROL DATA
SYSTEM CONTROL INTERFACE
READ TIMING CONTROL
READ CONTROL DATA
READ U/V TIMING DATA
TP500 (YRCK) ⑦
Y READ CLK GEN
Q550,551 X550 4FSC OSC
CV550 Y READ CLOCK FREQ.
WRITE/READ TIMING CONTROL
IC753
INCO
YMW4-YMW7
YSR4-YSR7
YMW0-YMW3
YSR0-YSR3
CMW0-CMW3
CSR2,CSR3
CSR0,CSR1
IC300 Y UPPER BITS EVEN FIELD MEMORY
IC301 Y UPPER BITS ODD FIELD MEMORY
IC302 Y LOWER BITS EVEN FIELD MEMORY
IC303 Y LOWER BITS ODD FIELD MEMORY
IC304 CHROMA EVEN FIELD MEMORY
IC305 CHROMA ODD FIELD MEMORY
IC350,351 CHROMA ADDRESS INCREMENT CORRECTOR
DWCK
IC352-354 READ MEMORY CONTROL
RSYC
XOE2 XOE2N CTLZ
OPT0 OPT1 OPT2
INC1 VCL1

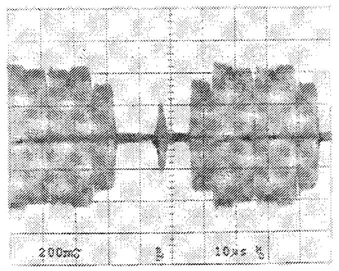

IC301
Y UPPER BITS ODD FIELD MEMORY
IC303
Y LOWER BITS ODD FIELD MEMORY
IC305
CHROMA ODD FIELD MEMORY
CHROMA ENCODER
IC400
Y ENHANCER
SEG CONTROL
DE-MULTIPLEXER
CLOCK CONV
CHROMA ENCODER
IC420
Y D/A CONV
Q20,210
Y AMP
FL10
LPF
Q10
BUFF
Q12
BUFF
TP10 (Y OUT)
⑧
CNR Y(X)
CN702
VO,222-4
IC440
C D/A CONV
Q21,214
C AMP
FL30
BPF
Q30
BUFF
Q31
C DELAY
IC354,Q33
CHROMA MUTE
Q32
BUFF
TP30 (C OUT)
⑨
CNR C(X)
CN702
VO,222-2
CHROMA EXIST
⑩
TP600 (CRCK)
IC600-604
C READ CLOCK COUNTER
C READ CLK GEN
⑩
TP620 (RCCK)
TP621 (RCK ERR)
Q620,621,X620
C READ CLK OSC
CV620 C READ CLOCK FREQ
PHASE COMPARATOR
IC352-354
READ MEMORY CONTROL
RSYC
XOE2
XOE2N
CTLZ
OPT0
OPT1
OPT2
YMR4~YMR7
YMR0~YMR3
CMR0~CMR3
YCK1
CCK1
USCO
SC4
CNR SYNC
CN710
SE,134-13
IC710,711
BURST PULSE GEN

VM-12P
SVO-9500MDP(1)

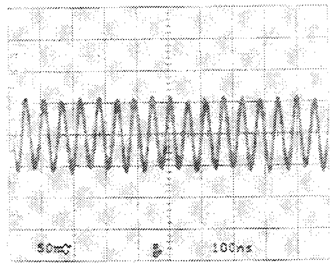
① TP100 (B-5) PB mode



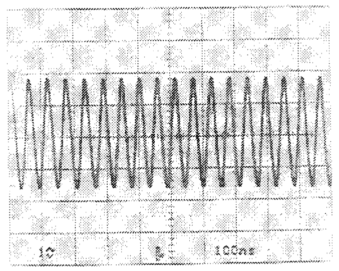
② TP120 (D-5) PB mode



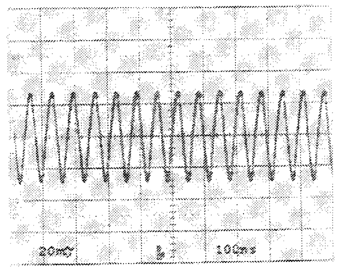
③ TP140 (B-4)



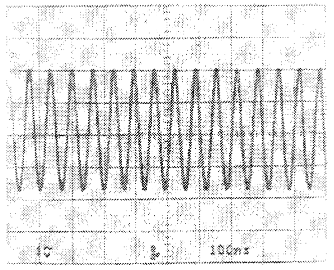
④ TP141 (B-4)



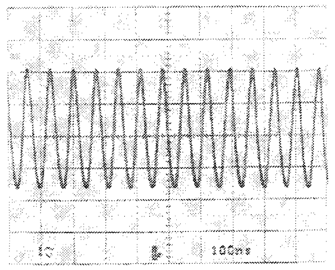
⑤ TP230 (E-5)



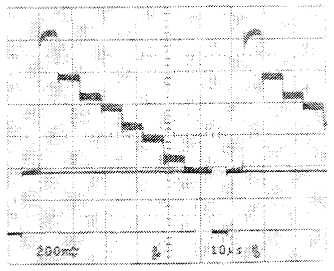
⑥ TP231 (D-4)



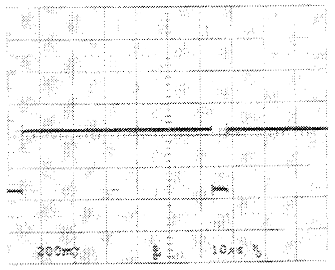
⑦ TP500 (F-1)



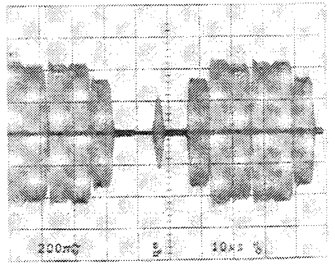
⑧ TP10 (A-1) PB mode



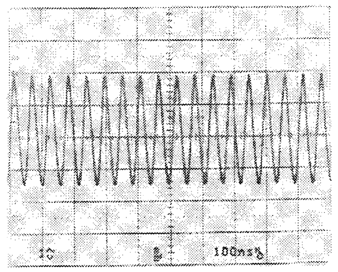
TP10 (A-1) STOP (E-E) mode



⑨ TP30 (A-1) PB mode

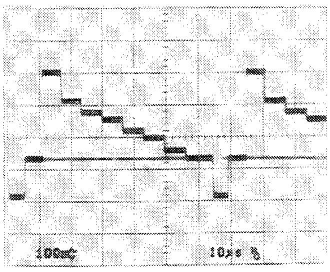


⑩ TP600 (D-1)
TP620 (C-1)

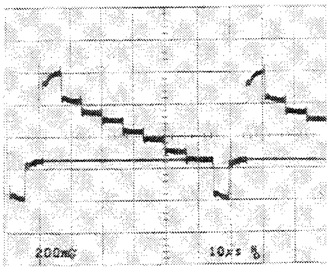


Measurement Condition
PB mode: KRV-45HPS
STOP (E-E) mode: S-VHS

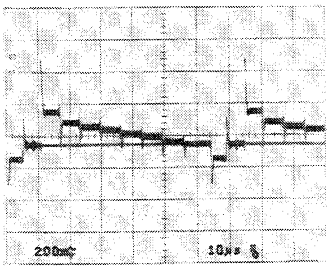
① TP203 (G-5＊) STOP (E-E) mode



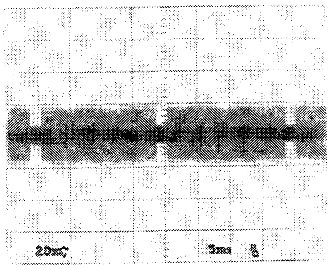
② TP201 (E-5＊) STOP (E-E) mode



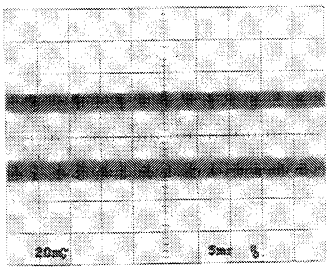
③ TP101 (K-3＊) STOP (E-E) mode



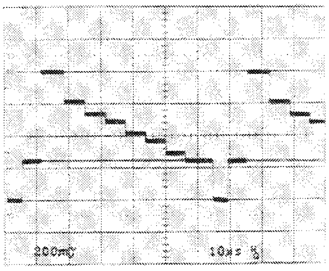
④ TP210 (J-1＊) STOP (E-E) mode



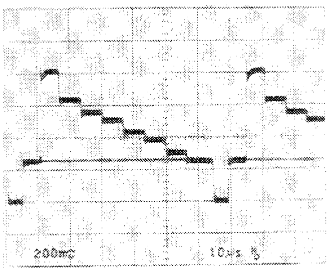
⑤ TP202 (L-1＊) STOP (E-E) mode



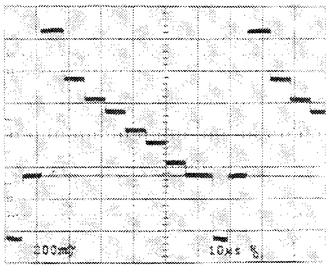
⑥ TP301 (C-5＊) STOP (E-E) mode



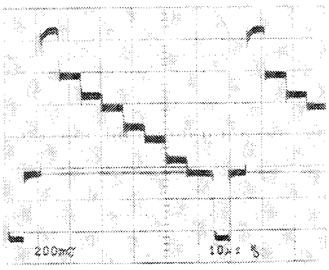
TP301 (C-5＊) PB mode



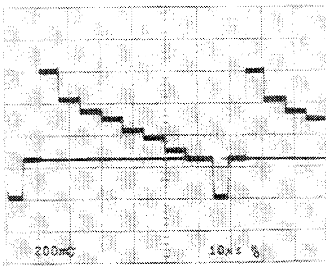
⑦ TP302 (A-5＊) STOP (E-E) mode



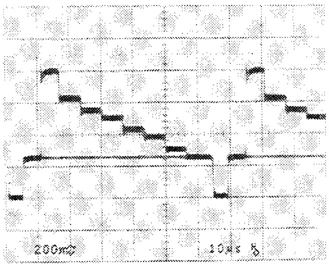
TP302 (A-5＊) PB mode



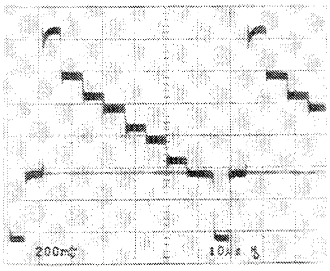
⑧ TP303 (D-4＊) STOP (E-E) mode



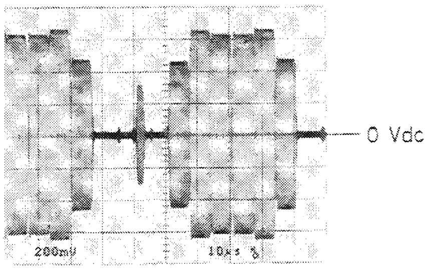
TP303 (D-4＊) PB mode



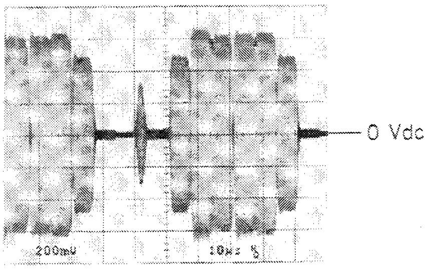
⑨ TP304 (D-2＊) PB mode



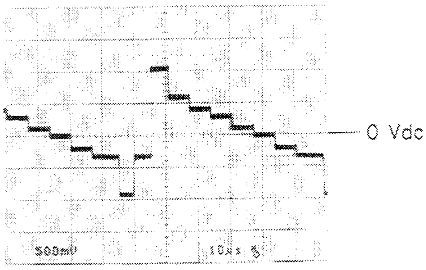
⑩ TP491 (H-1＊) STOP (E-E) mode



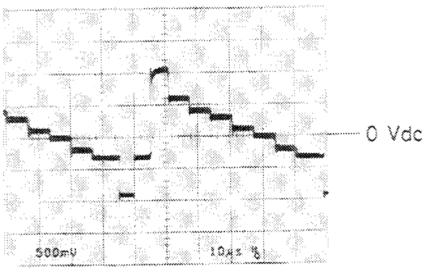
TP491 (H-1＊) PB mode



⑪ TP492 (G-1＊) STOP (E-E) mode



TP492 (G-1＊) PB mode

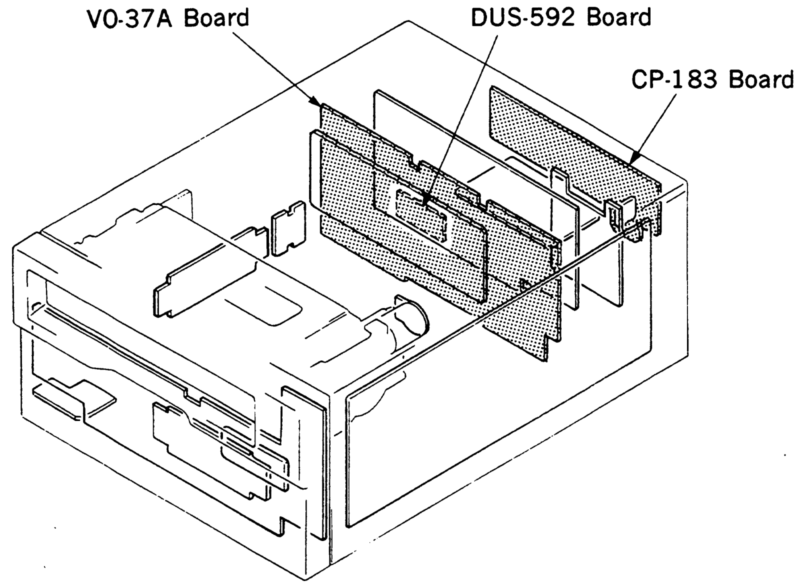


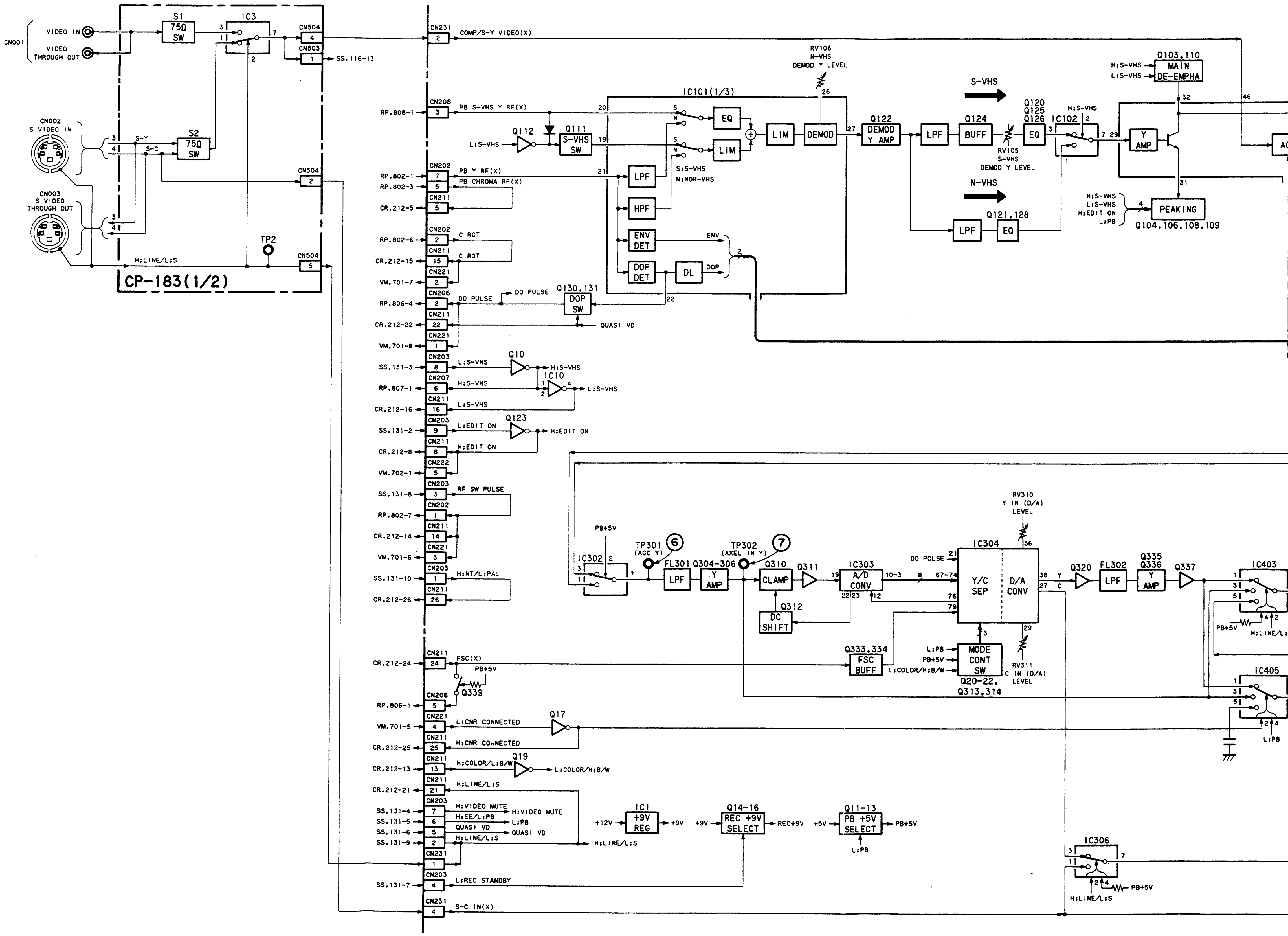
Measurement Condition

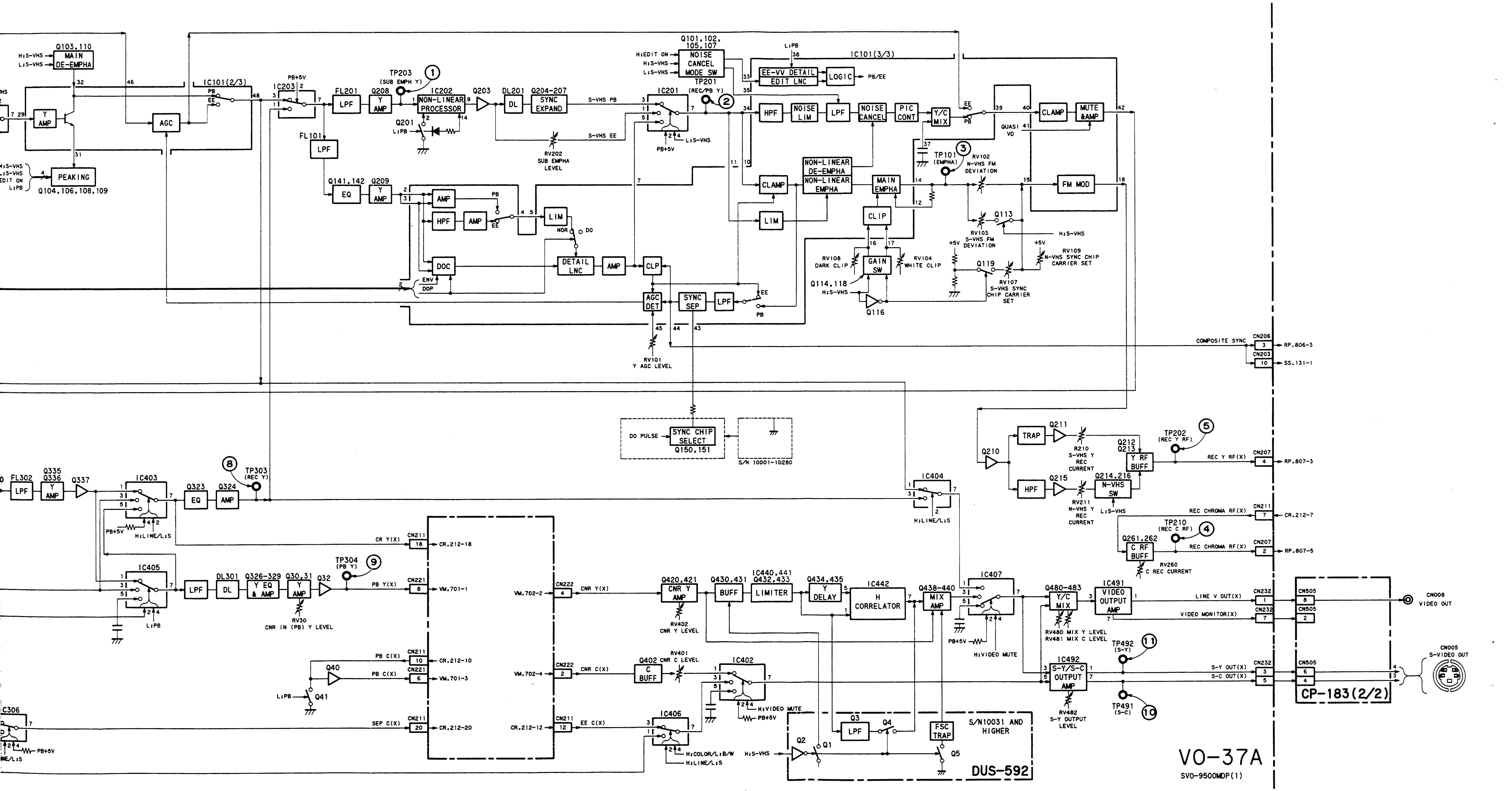
S-VIDEO IN: 75% color bars
STOP (E-E) mode: S-VHS
PB mode: KRV-45HPS

＊ mark; B SIDE mount

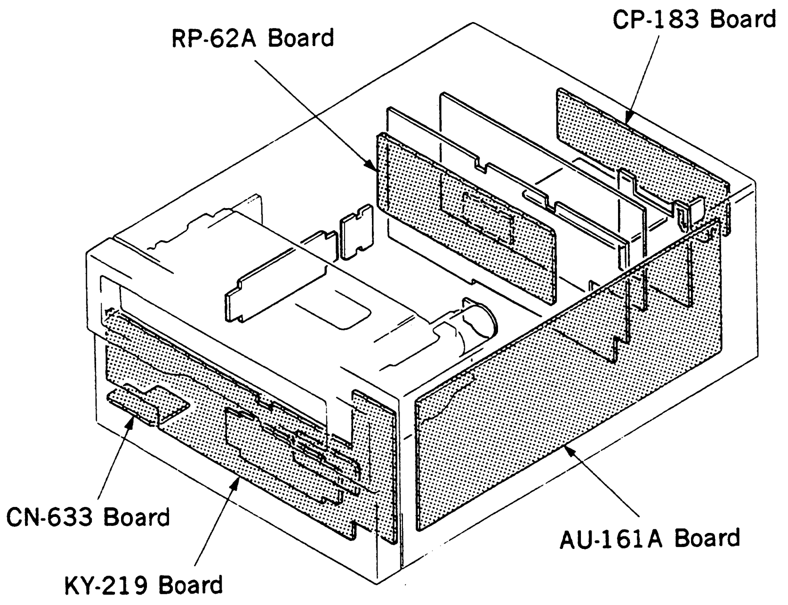
Y/C VIDEO PROCESS

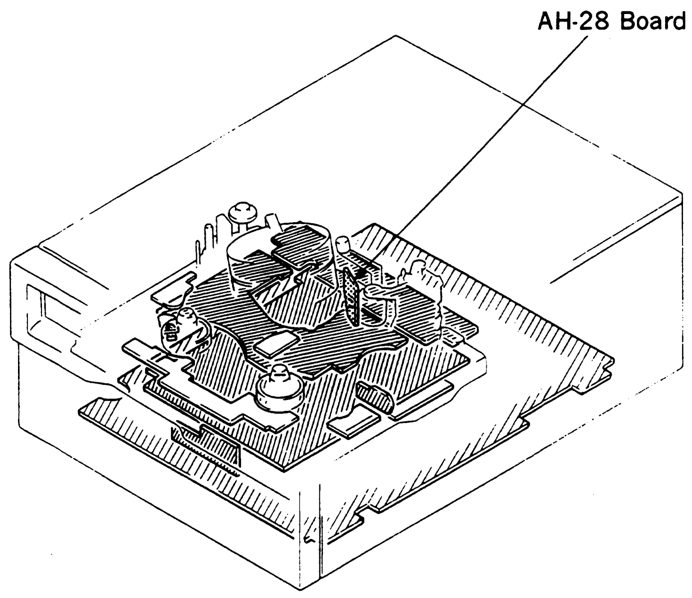

VO-37A Board
DUS-592 Board
CP-183 Board

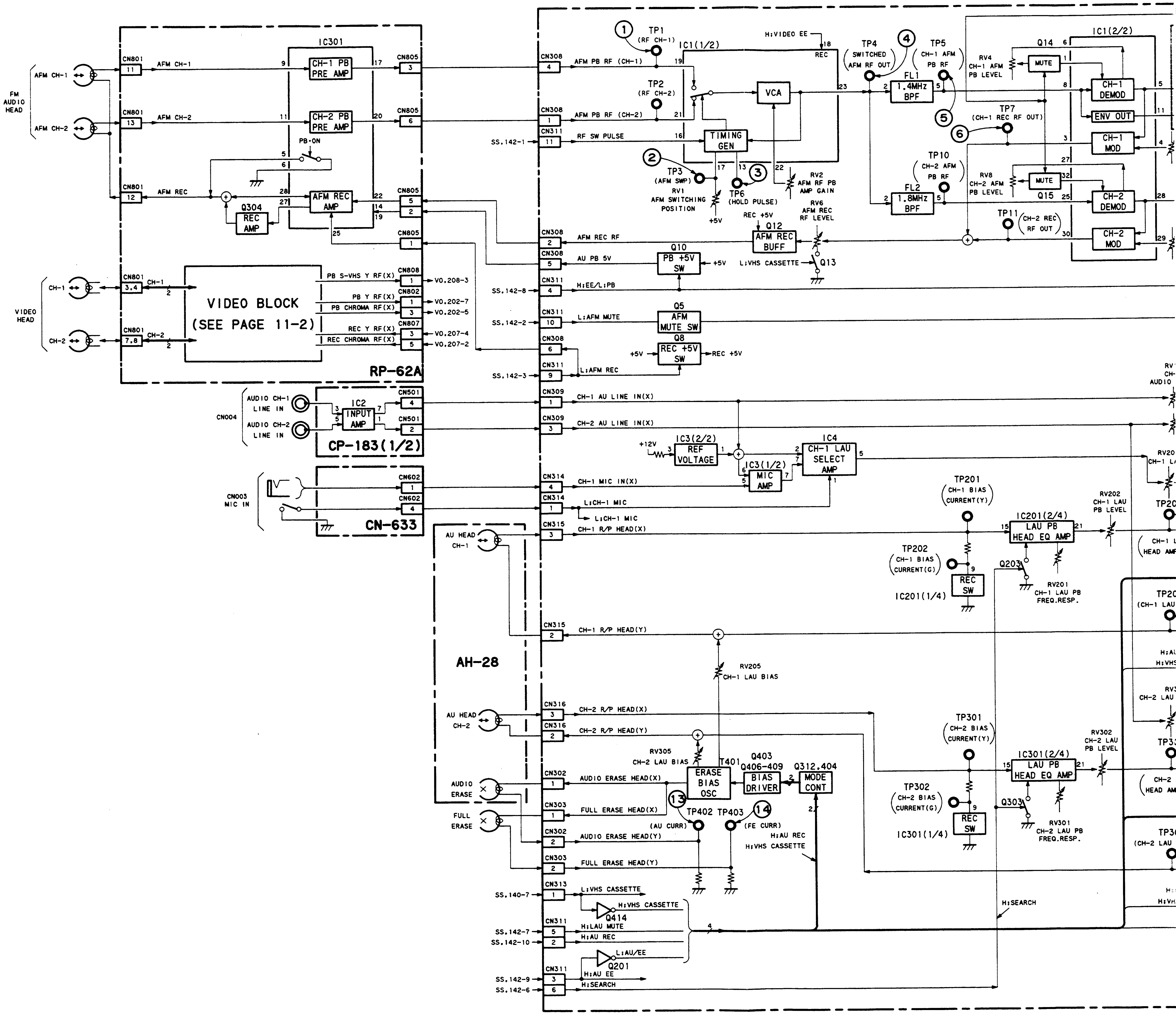

CN001
VIDEO IN
VIDEO THROUGH OUT
CN002 S VIDEO IN
CN003 S VIDEO THROUGH OUT
S1 75Ω SW
S2 75Ω SW
IC3
S-Y
S-C
CN504
CN503
SS.116-13
TP2
H:LINE/L:S
CP-183(1/2)
CN231
COMP/S-Y VIDEO(X)
CN208
PB S-VHS Y RF(X)
RP.808-1
Q112
Q111 S-VHS SW
L:S-VHS
IC101(1/3)
RV106 N-VHS DEMOD Y LEVEL
EQ
LIM
DEMOD
S:S-VHS
N:NOR-VHS
Q122 DEMOD Y AMP
LPF
Q124 BUFF
S-VHS
N-VHS
Q120 Q125 Q126
RV105 S-VHS DEMOD Y LEVEL
IC102
Q121,128
Y AMP
Q103,110 MAIN DE-EMPHA
H:S-VHS
L:S-VHS
PEAKING
Q104,106,108,109
H:EDIT ON
L:PB
CN202
PB Y RF(X)
PB CHROMA RF(X)
RP.802-1
RP.802-3
CR.212-5
HPF
ENV DET
DOP DET
DL
ENV
DOP
C ROT
RP.802-6
CR.212-15
VM.701-7
CN206
DO PULSE
Q130,131 DOP SW
RP.806-4
CR.212-22
QUASI VD
VM.701-8
CN203
SS.131-3
Q10
IC10
H:S-VHS
CN207
RP.807-1
CR.212-16
L:EDIT ON
Q123
SS.131-2
H:EDIT ON
CR.212-8
CN222
VM.702-1
RF SW PULSE
SS.131-8
RP.802-7
CR.212-14
VM.701-6
H:NT/L:PAL
SS.131-10
CR.212-26
PB+5V
IC302
TP301 (AGC Y) ⑥
FL301
Q304-306
TP302 (AXEL IN Y) ⑦
Q310 CLAMP
Q311
IC303 A/D CONV
Q312 DC SHIFT
RV310 Y IN (D/A) LEVEL
IC304
Y/C SEP
D/A CONV
Q333,334 FSC BUFF
MODE CONT SW
Q20-22, Q313,314
L:PB
PB+5V
L:COLOR/H:B/W
RV311 C IN (D/A) LEVEL
Q320
FL302
Q335 Q336
Q337
IC403
IC405
H:LINE/L:S
CN211
FSC(X)
CR.212-24
Q339
RP.806-1
L:CNR CONNECTED
Q17
VM.701-5
H:CNR CONNECTED
CR.212-25
H:COLOR/L:B/W
Q19
CR.212-13
CR.212-21
H:VIDEO MUTE
H:EE/L:PB
SS.131-4
SS.131-5
SS.131-6
SS.131-9
IC1 +9V REG
+12V
+9V
Q14-16 REC +9V SELECT
REC+9V
+5V
Q11-13 PB +5V SELECT
L:REC STANDBY
SS.131-7
S-C IN(X)
IC306

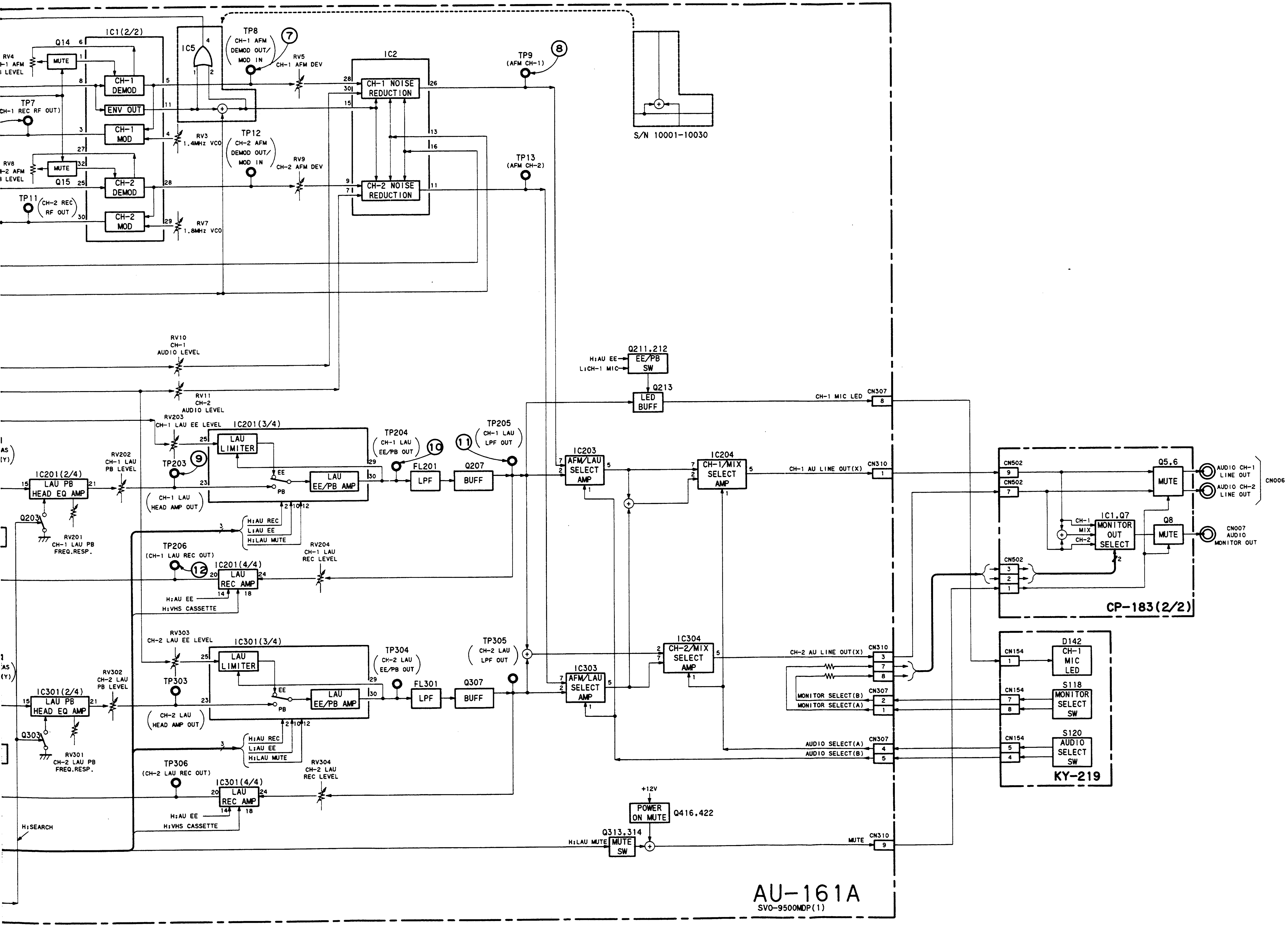

Q103,110
MAIN DE-EMPHA
H:S-VHS
L:S-VHS
Y AMP
PEAKING
Q104,106,108,109
AGC
IC101(2/3)
PB
EE
IC203
PB+5V
FL201
LPF
FL101
Q208
Y AMP
TP203
(SUB EMPH Y)
①
IC202
NON-LINEAR PROCESSOR
Q201
L:PB
Q203
DL201
DL
Q204-207
SYNC EXPAND
S-VHS PB
S-VHS EE
RV202
SUB EMPHA LEVEL
Q141,142
EQ
Q209
AMP
HPF
LIM
NOR
DO
DOC
DETAIL LNC
CLP
ENV
DOP
AGC DET
SYNC SEP
RV101
Y AGC LEVEL
Q101,102,105,107
NOISE CANCEL MODE SW
H:EDIT ON
TP201
(REC/PB Y)
②
IC201
PB+5V
L:S-VHS
L:PB
IC101(3/3)
EE-VV DETAIL EDIT LNC
LOGIC
PB/EE
NOISE LIM
NOISE CANCEL
PIC CONT
Y/C MIX
CLAMP
MUTE &AMP
QUASI VD
NON-LINEAR DE-EMPHA
NON-LINEAR EMPHA
MAIN EMPHA
CLIP
GAIN SW
RV108
DARK CLIP
RV104
WHITE CLIP
Q114,118
H:S-VHS
Q116
TP101
(EMPHA)
③
RV102
N-VHS FM DEVIATION
RV103
S-VHS FM DEVIATION
Q113
Q119
RV109
N-VHS SYNC CHIP CARRIER SET
RV107
S-VHS SYNC CHIP CARRIER SET
FM MOD
COMPOSITE SYNC
CN206
RP.806-3
CN203
SS.131-1
DO PULSE
SYNC CHIP SELECT
Q150,151
S/N 10001-10280
TRAP
Q211
Q210
R210
S-VHS Y REC CURRENT
Q212
Q213
Y RF BUFF
TP202
(REC Y RF)
⑤
REC Y RF(X)
CN207
RP.807-3
Q215
Q214,216
N-VHS SW
RV211
N-VHS Y REC CURRENT
L:S-VHS
REC CHROMA RF(X)
CN211
CR.212-7
TP210
(REC C RF)
④
Q261,262
C RF BUFF
RV260
C REC CURRENT
RP.807-5
FL302
Q335
Q336
Q337
IC403
Q323
Q324
TP303
(REC Y)
⑧
H:LINE/L:S
IC404
CR Y(X)
CN211
CR.212-18
IC405
DL301
Q326-329
Y EQ & AMP
Q30,31
Q32
TP304
(PB Y)
⑨
PB Y(X)
CN221
VM.701-1
RV30
CNR IN (PB) Y LEVEL
VM.702-2
CN222
CNR Y(X)
Q420,421
CNR Y AMP
RV402
CNR Y LEVEL
Q430,431
BUFF
IC440,441
Q432,433
LIMITER
Q434,435
Y DELAY
IC442
H CORRELATOR
Q438-440
MIX AMP
IC407
H:VIDEO MUTE
Q480-483
Y/C MIX
RV480 MIX Y LEVEL
RV481 MIX C LEVEL
IC491
VIDEO OUTPUT AMP
LINE V OUT(X)
VIDEO MONITOR(X)
CN232
CN505
CN008
VIDEO OUT
PB C(X)
CR.212-10
Q40
VM.701-3
Q41
VM.702-4
CNR C(X)
Q402
C BUFF
RV401
CNR C LEVEL
IC402
H:VIDEO MUTE
IC306
SEP C(X)
CR.212-20
CR.212-12
EE C(X)
IC406
H:COLOR/L:B/W
H:LINE/L:S
Q2
Q1
Q3
Q4
Q5
FSC TRAP
S/N10031 AND HIGHER
DUS-592
TP492
(S-Y)
⑪
IC492
S-Y/S-C OUTPUT AMP
RV482
S-Y OUTPUT LEVEL
TP491
(S-C)
⑩
S-Y OUT(X)
S-C OUT(X)
CN005
S-VIDEO OUT
CP-183(2/2)
VO-37A
SVO-9500MDP(1)

AFM PROCESS/NORMAL AUDIO PROCESS

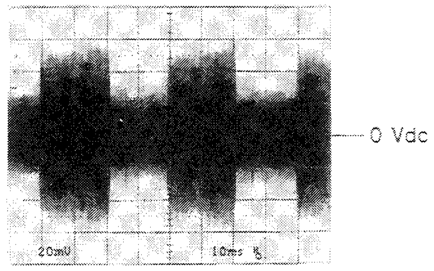

RP-62A Board
CP-183 Board
CN-633 Board
KY-219 Board
AU-161A Board



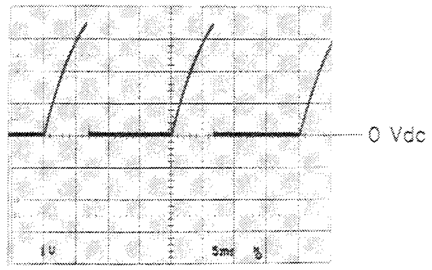

FM AUDIO HEAD
AFM CH-1
AFM CH-2
CN801
IC301
CH-1 PB PRE AMP
CH-2 PB PRE AMP
PB-ON
AFM REC
Q304 REC AMP
AFM REC AMP
CN805
VIDEO HEAD
CH-1
CH-2
VIDEO BLOCK (SEE PAGE 11-2)
PB S-VHS Y RF(X)
PB Y RF(X)
PB CHROMA RF(X)
REC Y RF(X)
REC CHROMA RF(X)
CN808
CN802
CN807
VO.208-3
VO.202-7
VO.202-5
VO.207-4
VO.207-2
RP-62A
CN004
AUDIO CH-1 LINE IN
AUDIO CH-2 LINE IN
IC2 INPUT AMP
CN501
CP-183(1/2)
CN003 MIC IN
CN602
CN-633
AU HEAD CH-1
AU HEAD CH-2
AH-28
AUDIO ERASE
FULL ERASE
TP1 (RF CH-1)
TP2 (RF CH-2)
IC1(1/2)
H:VIDEO EE
REC
VCA
TIMING GEN
TP3 (AFM SWP)
RV1 AFM SWITCHING POSITION
TP6 (HOLD PULSE)
RV2 AFM RF PB AMP GAIN
RV6 AFM REC RF LEVEL
REC +5V
Q12 AFM REC BUFF
Q10 PB +5V SW
L:VHS CASSETTE
Q13
Q5 AFM MUTE SW
Q8 REC +5V SW
REC +5V
CN308
CN311
AFM PB RF (CH-1)
AFM PB RF (CH-2)
RF SW PULSE
AFM REC RF
AU PB 5V
H:EE/L:PB
L:AFM MUTE
L:AFM REC
SS.142-1
SS.142-8
SS.142-2
SS.142-3
TP4 (SWITCHED AFM RF OUT)
TP5 (CH-1 AFM PB RF)
FL1 1.4MHz BPF
FL2 1.8MHz BPF
TP10 (CH-2 AFM PB RF)
TP7 (CH-1 REC RF OUT)
TP11 (CH-2 REC RF OUT)
RV4 CH-1 AFM PB LEVEL
RV8 CH-2 AFM PB LEVEL
Q14 MUTE
Q15 MUTE
IC1(2/2)
CH-1 DEMOD
ENV OUT
CH-1 MOD
CH-2 DEMOD
CH-2 MOD
CN309
CH-1 AU LINE IN(X)
CH-2 AU LINE IN(X)
IC3(2/2) REF VOLTAGE
+12V
IC3(1/2) MIC AMP
IC4 CH-1 LAU SELECT AMP
CN314
CH-1 MIC IN(X)
L:CH-1 MIC
CN315
CH-1 R/P HEAD(X)
CH-1 R/P HEAD(Y)
TP201 (CH-1 BIAS CURRENT(Y))
TP202 (CH-1 BIAS CURRENT(G))
IC201(1/4) REC SW
Q203
IC201(2/4) LAU PB HEAD EQ AMP
RV201 CH-1 LAU PB FREQ.RESP.
RV202 CH-1 LAU PB LEVEL
RV205 CH-1 LAU BIAS
CN316
CH-2 R/P HEAD(X)
CH-2 R/P HEAD(Y)
RV305 CH-2 LAU BIAS
T401 ERASE BIAS OSC
Q403 Q406-409 BIAS DRIVER
Q312,404 MODE CONT
TP301 (CH-2 BIAS CURRENT(Y))
TP302 (CH-2 BIAS CURRENT(G))
IC301(1/4) REC SW
Q303
IC301(2/4) LAU PB HEAD EQ AMP
RV301 CH-2 LAU PB FREQ.RESP.
RV302 CH-2 LAU PB LEVEL
CN302
CN303
AUDIO ERASE HEAD(X)
FULL ERASE HEAD(X)
AUDIO ERASE HEAD(Y)
FULL ERASE HEAD(Y)
TP402 (AU CURR)
TP403 (FE CURR)
H:AU REC
H:VHS CASSETTE
CN313
L:VHS CASSETTE
Q414
H:LAU MUTE
H:AU REC
L:AU/EE
Q201
H:AU EE
H:SEARCH
SS.140-7
SS.142-7
SS.142-10
SS.142-9
SS.142-6


IC1(2/2)
Q14
MUTE
CH-1 DEMOD
ENV OUT
CH-1 MOD
RV4
CH-1 AFM
LEVEL
TP7
CH-1 REC RF OUT
RV8
CH-2 AFM
LEVEL
MUTE
Q15
CH-2 DEMOD
TP11
CH-2 REC RF OUT
CH-2 MOD
RV3 1.4MHz VCO
RV7 1.8MHz VCO
IC5
TP8
CH-1 AFM DEMOD OUT/MOD IN
7
RV5
CH-1 AFM DEV
TP12
CH-2 AFM DEMOD OUT/MOD IN
RV9
CH-2 AFM DEV
IC2
CH-1 NOISE REDUCTION
CH-2 NOISE REDUCTION
TP9
(AFM CH-1)
8
TP13
(AFM CH-2)
S/N 10001-10030
RV10
CH-1 AUDIO LEVEL
RV11
CH-2 AUDIO LEVEL
Q211,212
H:AU EE
L:CH-1 MIC
EE/PB SW
Q213
LED BUFF
CH-1 MIC LED
CN307
RV203
CH-1 LAU EE LEVEL
IC201(3/4)
LAU LIMITER
TP204
CH-1 LAU EE/PB OUT
10
TP205
CH-1 LAU LPF OUT
11
TP203
9
IC201(2/4)
LAU PB HEAD EQ AMP
RV202
CH-1 LAU PB LEVEL
EE
PB
LAU EE/PB AMP
FL201
LPF
Q207
BUFF
IC203
AFM/LAU SELECT AMP
IC204
CH-1/MIX SELECT AMP
CH-1 AU LINE OUT(X)
CN310
CH-1 LAU HEAD AMP OUT
Q203
RV201
CH-1 LAU PB FREQ.RESP.
H:AU REC
L:AU EE
H:LAU MUTE
TP206
(CH-1 LAU REC OUT)
12
IC201(4/4)
LAU REC AMP
RV204
CH-1 LAU REC LEVEL
H:AU EE
H:VHS CASSETTE
RV303
CH-2 LAU EE LEVEL
IC301(3/4)
LAU LIMITER
TP304
CH-2 LAU EE/PB OUT
TP305
CH-2 LAU LPF OUT
TP303
RV302
CH-2 LAU PB LEVEL
IC301(2/4)
LAU PB HEAD EQ AMP
LAU EE/PB AMP
FL301
LPF
Q307
BUFF
IC303
AFM/LAU SELECT AMP
IC304
CH-2/MIX SELECT AMP
CH-2 AU LINE OUT(X)
CH-2 LAU HEAD AMP OUT
Q303
RV301
CH-2 LAU PB FREQ.RESP.
MONITOR SELECT(B)
MONITOR SELECT(A)
AUDIO SELECT(A)
AUDIO SELECT(B)
TP306
(CH-2 LAU REC OUT)
IC301(4/4)
LAU REC AMP
RV304
CH-2 LAU REC LEVEL
H:AU EE
H:VHS CASSETTE
H:SEARCH
+12V
POWER ON MUTE
Q416,422
Q313,314
H:LAU MUTE
MUTE SW
MUTE
AU-161A
SVO-9500MDP(1)
CN502
Q5,6
MUTE
AUDIO CH-1 LINE OUT
AUDIO CH-2 LINE OUT
CN006
IC1,Q7
CH-1
MIX
CH-2
MONITOR OUT SELECT
Q8
MUTE
CN007
AUDIO MONITOR OUT
CP-183(2/2)
D142
CN154
CH-1 MIC LED
S118
MONITOR SELECT SW
S120
AUDIO SELECT SW
KY-219

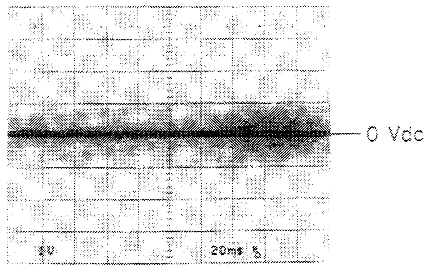
① TP1 (A-3) PB mode



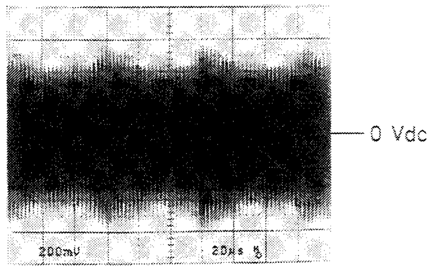
② TP3 (A-2) PB mode



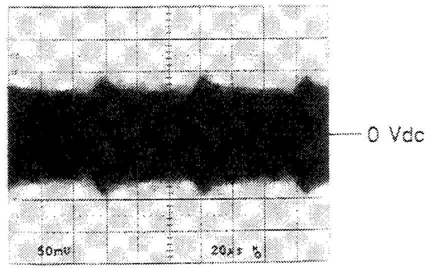
③ TP6 (A-1) PB mode



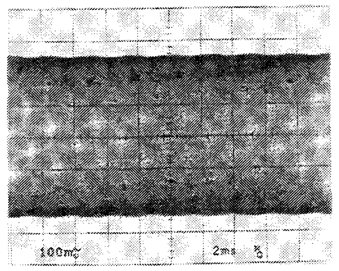
④ TP4 (B-2) PB mode



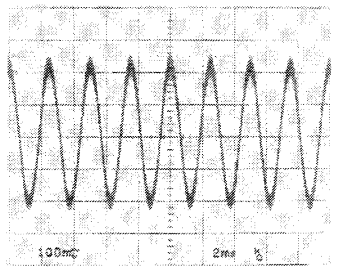
⑤ TP5 (A-1) PB mode



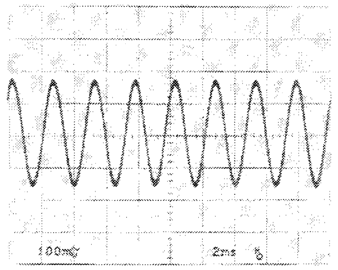
⑥ TP7 (B-1) STOP (E-E) mode



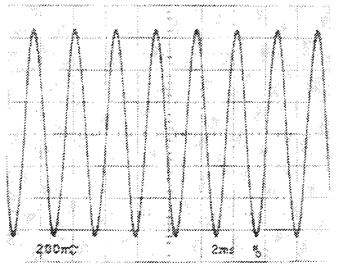
⑦ TP8 (B-1) PB mode



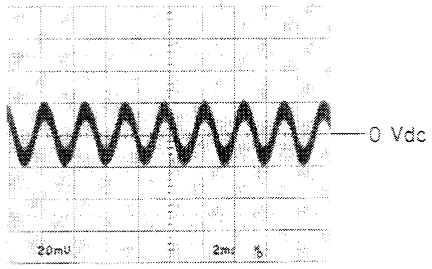
TP8 (B-1) REC mode



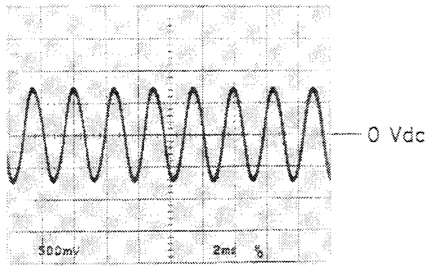
⑧ TP9 (C-1) STOP (E-E) mode



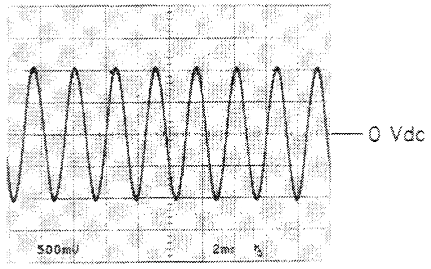
⑨ TP203 (J-3) PB mode



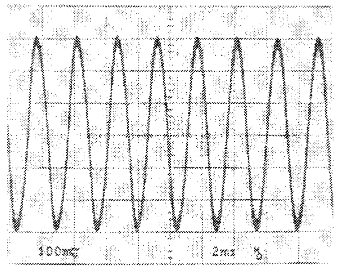
⑩ TP204 (I-2) PB mode



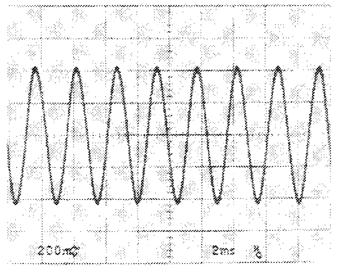
TP204 (I-2) STOP (E-E) mode



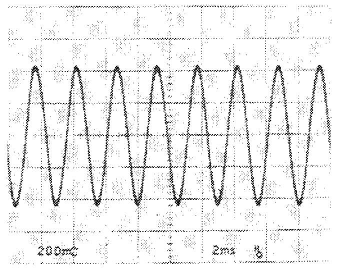
⑪ TP205 (J-1) PB mode



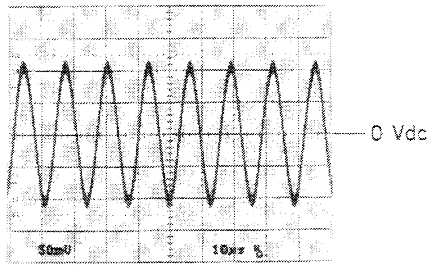
TP205 (J-1) STOP (E-E) mode



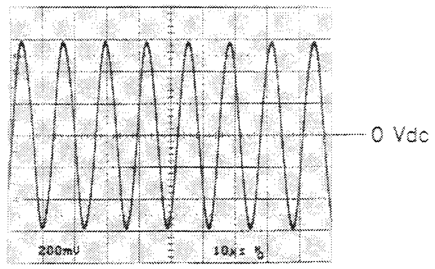
⑫ TP206 (J-2) STOP (E-E) mode



⑬ TP402 (L-4) REC mode

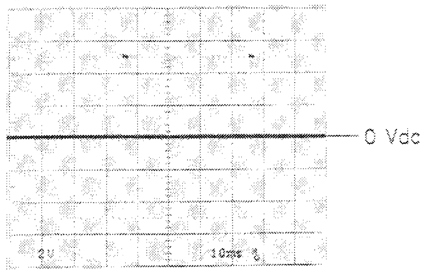


⑭ TP403 (L-4) REC mode

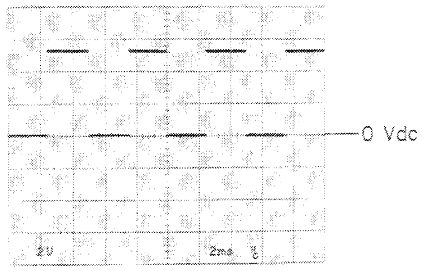


Measurement Condition
CH-1, AUDIO IN: 400 Hz, −10 dBu
STOP (E-E) mode: N-VHS
REC mode: N-VHS
PB mode: KRV-45PS

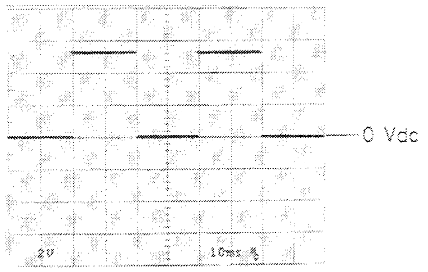
① TP104 (G-3) PB mode



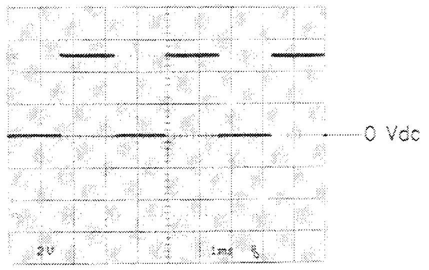
② TP110 (G-8) PB mode



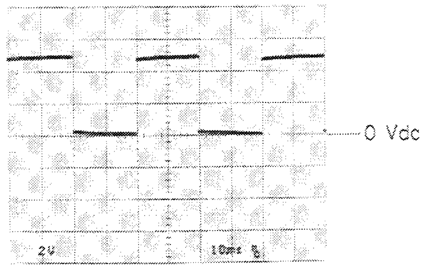
③ TP111 (L-7) PB mode



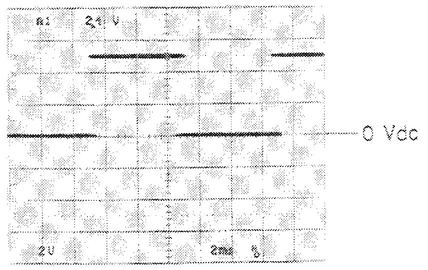
④ TP113 (G-3) PB mode



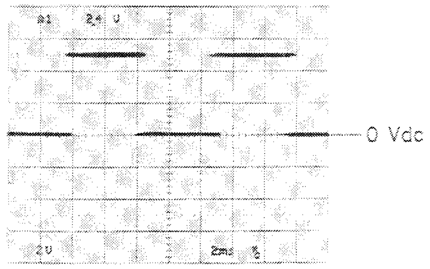
⑤ TP115 (K-4) PB mode



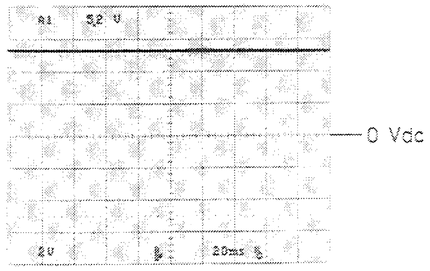
⑥ CN151 pin 4 (A-5) PB mode



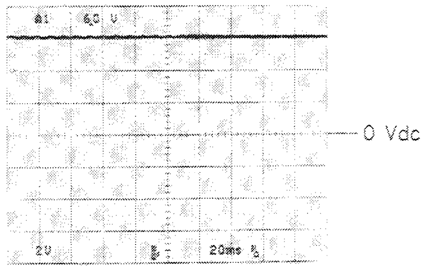
⑦ CN151 pin 5 (A-5) PB mode



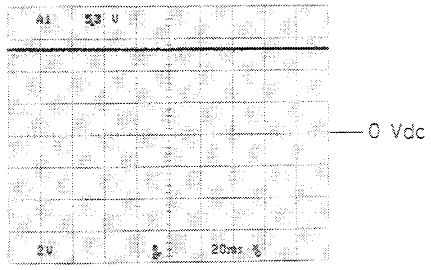
⑧ TP314 (C-2) PB mode



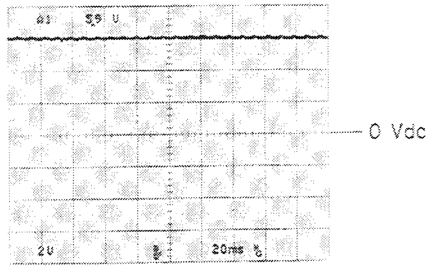
⑨ TP313 (D-3) PB mode



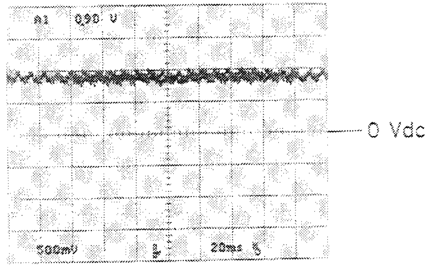
⑩ TP305 (B-3) PB mode



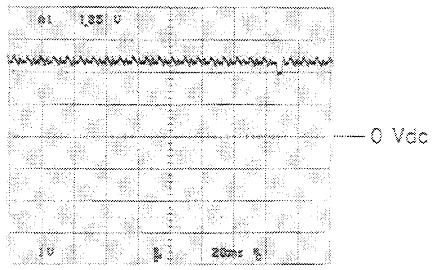
⑪ TP307 (C-2) PB mode



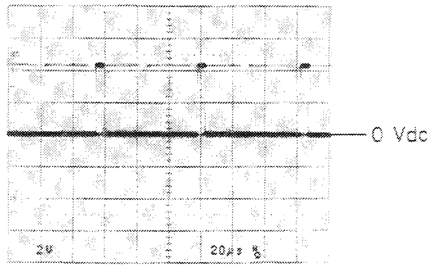
⑫ TP306 (B-2) PB mode



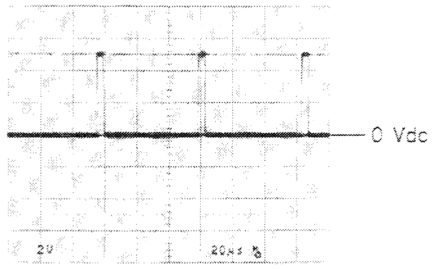
⑬ TP308 (B-3) PB mode



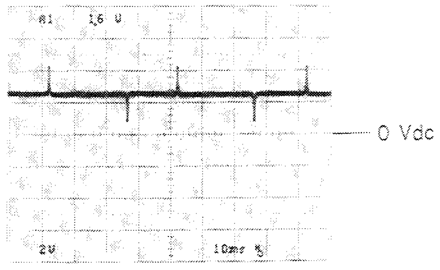
⑭ CN134 pin 13 (E-9) STOP (E-E) mode



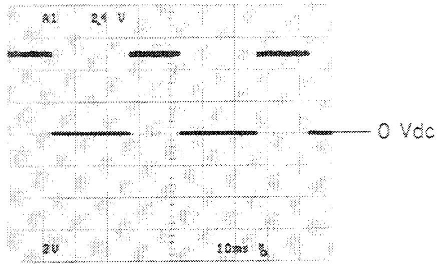
⑮ CN131 pin 1 (L-4) STOP (E-E) mode



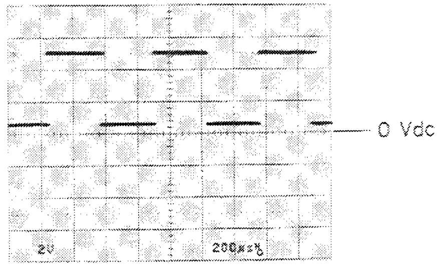
⑯ TP500 [DUS-534 (C-1)] PB mode



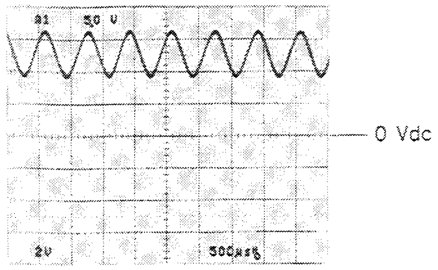
⑰ CN811 pin 3 (F-4) PB mode



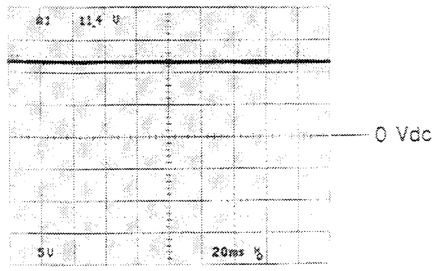
⑱ TP103 (K-9) PB mode



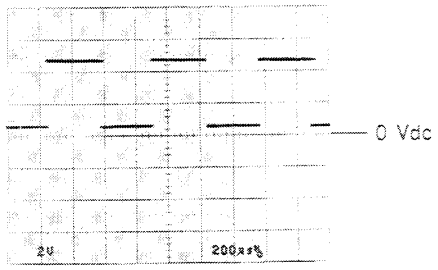
⑲ TP503 (K-9) PB mode



⑳ TP504 (K-9) PB mode



㉑ TP505 (K-9) PB mode



Measurement Condition

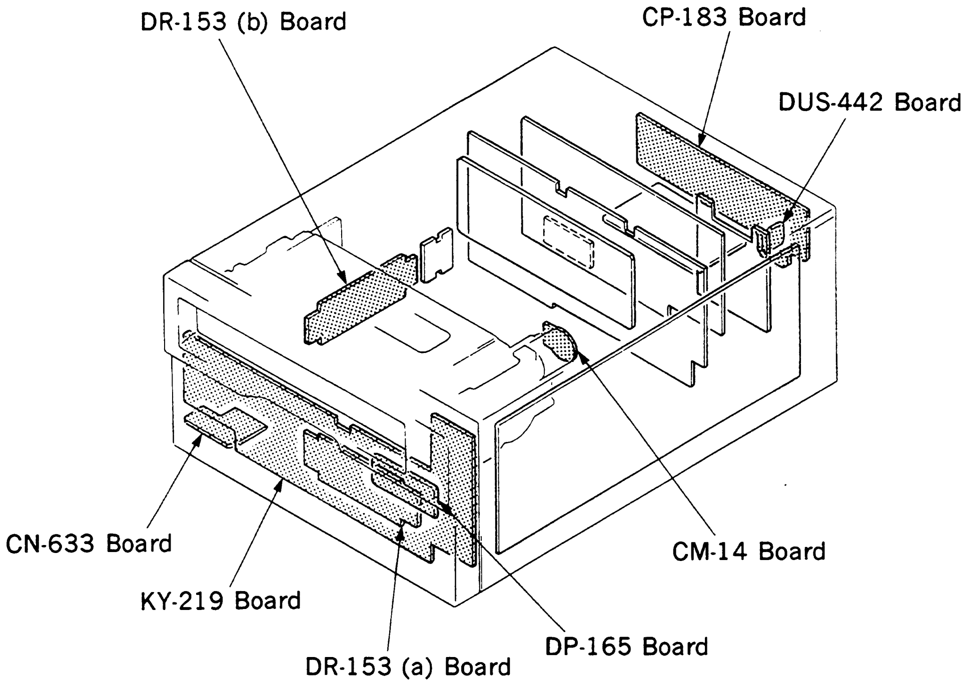
PB mode: KRV-45HPS

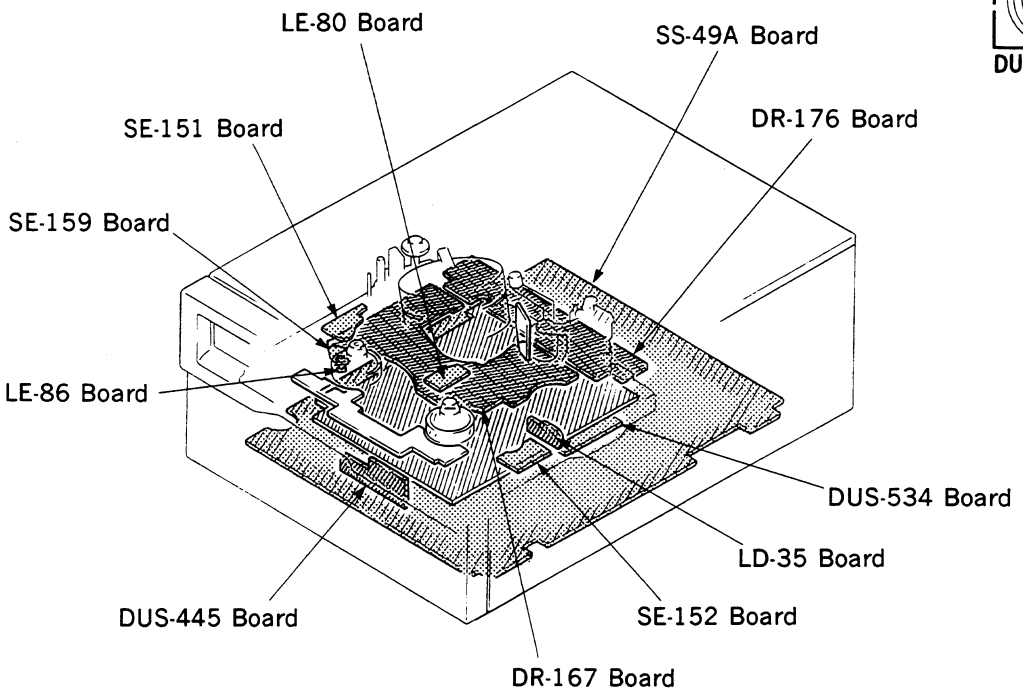
S-VIDEO IN: 75% color bars

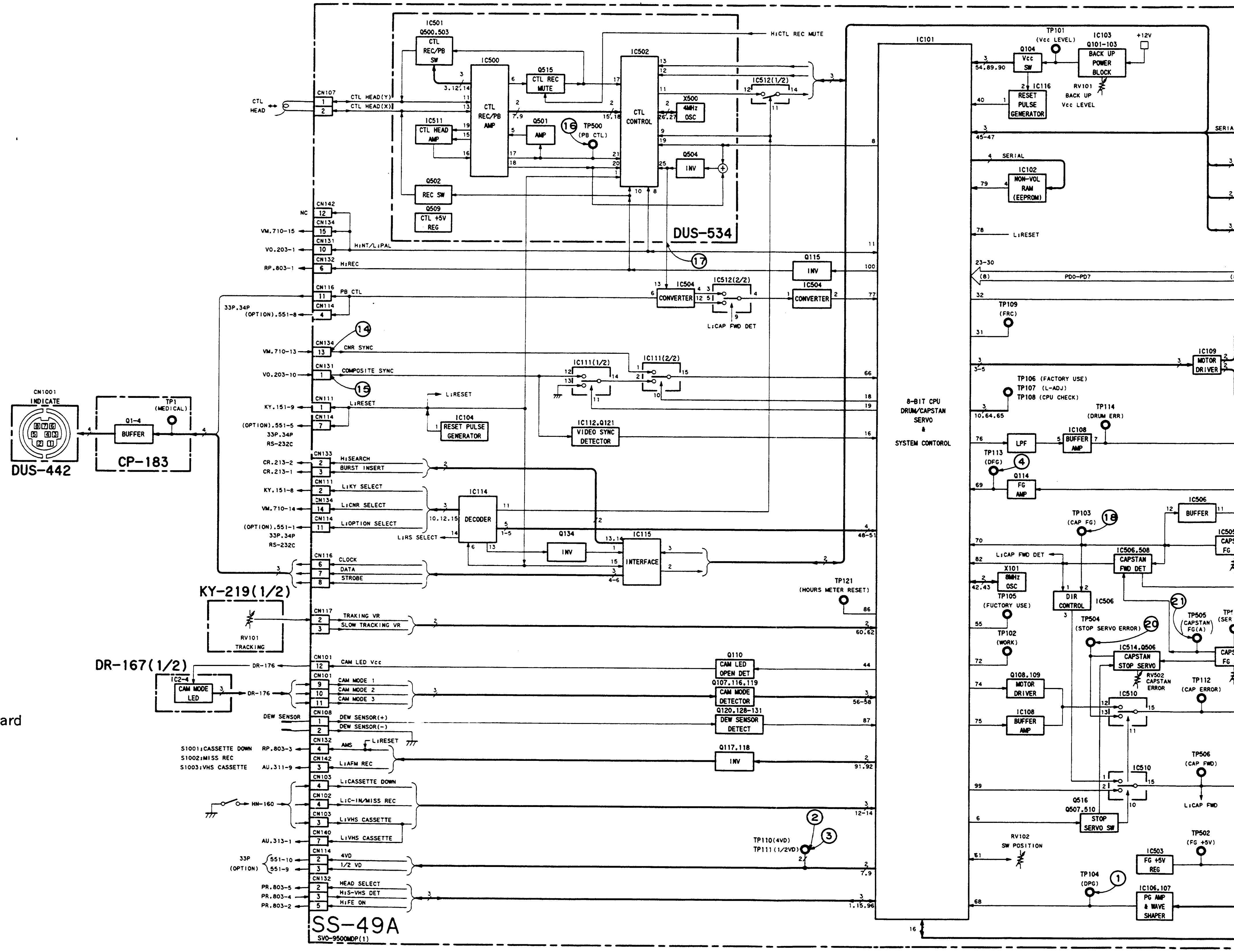
STOP (E-E) mode: S-VHS

SERVO & SYSTEM CONTROL

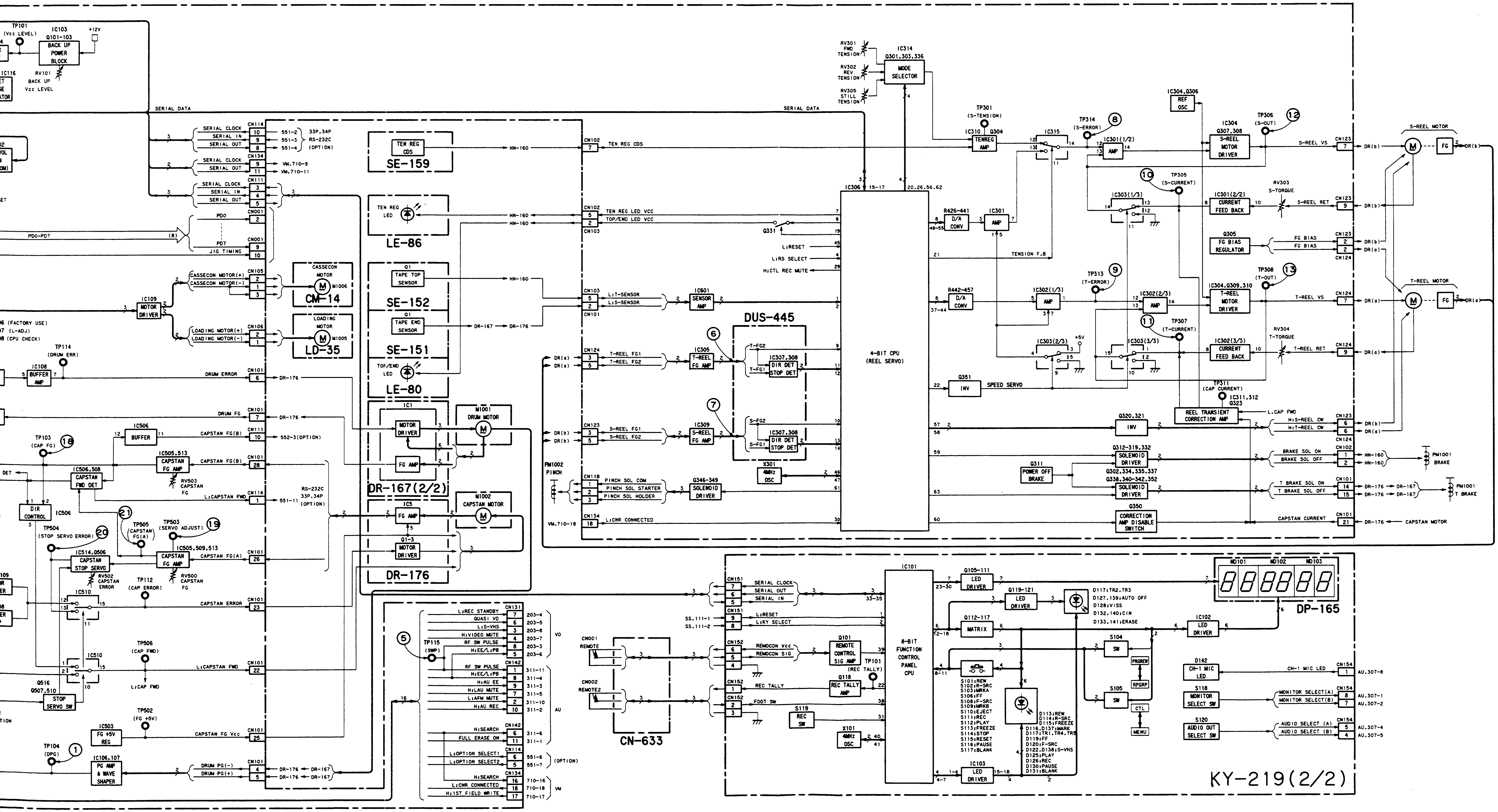
SERVO & SYSTEM CONTROL


DR-153 (b) Board
CP-183 Board
DUS-442 Board
CN-633 Board
CM-14 Board
KY-219 Board
DP-165 Board
DR-153 (a) Board


LE-80 Board
SS-49A Board
SE-151 Board
DR-176 Board
SE-159 Board
LE-86 Board
DUS-534 Board
LD-35 Board
DUS-445 Board
SE-152 Board
DR-167 Board


CTL HEAD
CN107
CTL HEAD(Y)
CTL HEAD(X)
IC501 Q500,503 CTL REC/PB SW
IC500 CTL REC/PB AMP
Q515 CTL REC MUTE
IC502 CTL CONTROL
X500 4MHz OSC
IC511 CTL HEAD AMP
Q501 AMP
TP500 (PB CTL)
Q504 INV
Q502 REC SW
Q509 CTL +5V REG
DUS-534
H:CTL REC MUTE
IC512(1/2)
IC512(2/2)
IC504 CONVERTER
L:CAP FWD DET
Q115 INV
IC504 CONVERTER
IC101
8-BIT CPU DRUM/CAPSTAN SERVO & SYSTEM CONTOROL
TP101 (Vcc LEVEL)
Q104 Vcc SW
IC103 Q101-103 BACK UP POWER BLOCK
+12V
IC116 RESET PULSE GENERATOR
RV101 BACK UP Vcc LEVEL
SERIAL
IC102 NON-VOL RAM (EEPROM)
L:RESET
PD0-PD7
TP109 (FRC)
IC109 MOTOR DRIVER
TP106 (FACTORY USE)
TP107 (L-ADJ)
TP108 (CPU CHECK)
TP114 (DRUM ERR)
IC108 BUFFER AMP
LPF
TP113 (DFG)
Q114 FG AMP
TP103 (CAP FG)
IC506 BUFFER
L:CAP FWD DET
IC506,508 CAPSTAN FWD DET
X101 8MHz OSC
TP105 (FACTORY USE)
DIR CONTROL
IC506
TP504 (STOP SERVO ERROR)
TP505 (CAPSTAN FG(A))
TP102 (WORK)
IC514,Q506 CAPSTAN STOP SERVO
RV502 CAPSTAN ERROR
TP112 (CAP ERROR)
Q108,109 MOTOR DRIVER
IC510
IC108 BUFFER AMP
TP506 (CAP FWD)
IC510
L:CAP FWD
Q516 Q507,510 STOP SERVO SW
RV102 SW POSITION
TP502 (FG +5V)
IC503 FG +5V REG
TP104 (DPG)
IC106,107 PG AMP & WAVE SHAPER
CN1001 INDICATE
DUS-442
Q1-4 BUFFER
TP1 (MEDICAL)
CP-183
33P,34P (OPTION),551-8
VM,710-15
VO,203-1
RP,803-1
H:NT/L:PAL
H:REC
PB CTL
CNR SYNC
COMPOSITE SYNC
L:RESET
IC111(1/2)
IC111(2/2)
IC104 RESET PULSE GENERATOR
IC112,Q121 VIDEO SYNC DETECTOR
KY,151-9
(OPTION),551-5 33P,34P RS-232C
CR,213-2
CR,213-1
H:SEARCH
BURST INSERT
L:KY SELECT
L:CNR SELECT
L:OPTION SELECT
IC114 DECODER
L:RS SELECT
Q134 INV
IC115 INTERFACE
CLOCK
DATA
STROBE
KY-219(1/2)
RV101 TRACKING
TRAKING VR
SLOW TRACKING VR
TP121 (HOURS METER RESET)
DR-167(1/2)
IC2-4 CAM MODE LED
DR-176
CAM LED Vcc
CAM MODE 1
CAM MODE 2
CAM MODE 3
Q110 CAM LED OPEN DET
Q107,116,119 CAM MODE DETECTOR
DEW SENSOR
DEW SENSOR(+)
DEW SENSOR(-)
Q120,128-131 DEW SENSOR DETECT
S1001:CASSETTE DOWN
S1002:MISS REC
S1003:VHS CASSETTE
AMS
L:AFM REC
Q117,118 INV
L:CASSETTE DOWN
HN-160
L:C-IN/MISS REC
L:VHS CASSETTE
AU,313-1
AU,311-9
4VD
1/2 VD
TP110(4VD)
TP111(1/2VD)
HEAD SELECT
H:S-VHS DET
H:FE ON
PR,803-5
PR,803-4
PR,803-2
SS-49A
SVO-9500MDP(1)

11-13


TP101
IC103
Q101-103
BACK UP POWER BLOCK
RV101 BACK UP Vcc LEVEL
+12V
SERIAL DATA
CN114
CN134
CN111
CN001
CN105
CN106
CN101
IC109 MOTOR DRIVER
CASSECON MOTOR(+)
CASSECON MOTOR(−)
LOADING MOTOR(+)
LOADING MOTOR(−)
CASSECON MOTOR M1006
CM-14
LOADING MOTOR M1005
LD-35
TP114 (DRUM ERR)
IC108 BUFFER AMP
DRUM ERROR
DRUM FG
IC506 BUFFER
CAPSTAN FG(B)
IC505,513 CAPSTAN FG AMP
RV503 CAPSTAN FG
IC506,508 CAPSTAN FWD DET
TP103 (CAP FG)
⑱
DIR CONTROL
L:CAPSTAN FWD
RS-232C 33P,34P (OPTION)
TP504 (STOP SERVO ERROR)
⑳
TP505 (CAPSTAN FG(A))
㉑
TP503 (SERVO ADJUST)
⑲
IC505,509,513 CAPSTAN FG AMP
CAPSTAN FG(A)
IC514,Q506 CAPSTAN STOP SERVO
RV502 CAPSTAN ERROR
TP112 (CAP ERROR)
RV500 CAPSTAN FG
CAPSTAN ERROR
IC510
TP506 (CAP FWD)
L:CAP FWD
Q516 Q507,510 STOP SERVO SW
TP502 (FG +5V)
IC503 FG +5V REG
CAPSTAN FG Vcc
TP104 (DPG)
①
IC106,107 PG AMP & WAVE SHAPER
DRUM PG(−)
DRUM PG(+)
DR-176 DR-167
TEN REG CDS
SE-159
TEN REG LED
LE-86
Q1 TAPE TOP SENSOR
SE-152
Q1 TAPE END SENSOR
SE-151
TOP/END LED
LE-80
IC1 MOTOR DRIVER
FG AMP
M1001 DRUM MOTOR
DR-167(2/2)
IC5 FG AMP
M1002 CAPSTAN MOTOR
Q1-3 MOTOR DRIVER
DR-176
HN-160
CN102
CN103
CN124
CN123
CN118
CN134
TEN REG LED VCC
TOP/END LED VCC
L:T-SENSOR
L:S-SENSOR
IC601 SENSOR AMP
DUS-445
T-REEL FG1
T-REEL FG2
IC305 T-REEL FG AMP
IC307,308 DIR DET STOP DET
S-REEL FG1
S-REEL FG2
IC309 S-REEL FG AMP
X301 4MHz OSC
PM1002 PINCH
PINCH SOL COM
PINCH SOL STARTER
PINCH SOL HOLDER
Q346-349 SOLENOID DRIVER
L:CNR CONNECTED
Q331
L:RESET
L:RS SELECT
H:CTL REC MUTE
IC306
4-BIT CPU (REEL SERVO)
RV301 FWD TENSION
RV302 REV TENSION
RV305 STILL TENSION
IC314 Q301,303,336 MODE SELECTOR
TP301 (S-TENSION)
IC310 Q304 TENREG AMP
IC315
TP314 (S-ERROR)
⑧
IC301(1/2) AMP
IC304,Q306 REF OSC
IC304 Q307,308 S-REEL MOTOR DRIVER
TP306 (S-OUT)
⑫
S-REEL VS
S-REEL MOTOR
FG
TP305 (S-CURRENT)
⑩
IC303(1/3)
IC301(2/2) CURRENT FEED BACK
RV303 S-TORQUE
S-REEL RET
R426-441 D/A CONV
IC301 AMP
TENSION F.B
Q305 FG BIAS REGULATOR
FG BIAS
TP313 (T-ERROR)
⑨
R442-457 D/A CONV
IC302(1/3) AMP
IC302(2/3) AMP
TP308 (T-OUT)
⑬
IC304,Q309,310 T-REEL MOTOR DRIVER
T-REEL VS
T-REEL MOTOR
TP307 (T-CURRENT)
⑪
IC303(2/3)
IC303(3/3)
IC302(3/3) CURRENT FEED BACK
RV304 T-TORQUE
T-REEL RET
Q351 INV
SPEED SERVO
TP311 (CAP CURRENT)
IC311,312 Q323
REEL TRANSIENT CORRECTION AMP
L:CAP FWD
Q320,321 INV
H:S-REEL CW
H:T-REEL CW
Q312-319,332 SOLENOID DRIVER
Q302,334,335,337 Q338,340-342,352
BRAKE SOL ON
BRAKE SOL OFF
PM1001 BRAKE
Q311 POWER OFF BRAKE
SOLENOID DRIVER
T BRAKE SOL ON
T BRAKE SOL OFF
PM1001 T BRAKE
Q350 CORRECTION AMP DISABLE SWITCH
CAPSTAN CURRENT
CAPSTAN MOTOR
DR(a)
DR(b)
CN131
CN142
L:REC STANDBY
QUASI VD
L:S-VHS
H:VIDEO MUTE
RF SW PULSE
H:EE/L:PB
H:AU EE
H:LAU MUTE
L:AFM MUTE
H:AU REC
H:SEARCH
FULL ERASE ON
L:OPTION SELECT1
L:OPTION SELECT2
L:CNR CONNECTED
H:1ST FIELD WRITE
VD
AU
(OPTION)
VM
⑤
TP115 (SWP)
CN001 REMOTE
CN002 REMOTE2
CN-633
CN151
CN152
SERIAL CLOCK
SERIAL OUT
SERIAL IN
L:RESET
L:KY SELECT
REMOCON Vcc
REMOCON SIG
Q101 REMOTE CONTROL SIG AMP
TP101 (REC TALLY)
REC TALLY
Q118 REC TALLY AMP
FOOT SW
S119 REC SW
X101 4MHz OSC
IC101
8-BIT FUNCTION CONTROL PANEL CPU
Q105-111 LED DRIVER
Q119-121 LED DRIVER
Q112-117 MATRIX
IC103 LED DRIVER
D117:TR2,TR3
D127,139:AUTO OFF
D128:VISS
D132,140:CIN
D133,141:ERASE
S101:REW S102:R-SRC S103:MRKA S106:FF S108:F-SRC S109:MRKB S110:EJECT S111:REC S112:PLAY S113:FREEZE S114:STOP S115:RESET S116:PAUSE S117:BLANK
D113:REW D114:R-SRC D115:FREEZE D116,D137:MARK D117:TR1,TR4,TR5 D119:FF D120:F-SRC D122,D138:S-VHS D125:PLAY D126:REC D130:PAUSE D131:BLANK
S104 SW
S105 SW
PRGREW
RPGRP
CTL
MENU
MD101 MD102 MD103
DP-165
IC102 LED DRIVER
D142 CH-1 MIC LED
CH-1 MIC LED
S118 MONITOR SELECT SW
MONITOR SELECT(A)
MONITOR SELECT(B)
S120 AUDIO OUT SELECT SW
AUDIO SELECT (A)
AUDIO SELECT (B)
CN154
AU.307-8
AU.307-1
AU.307-2
AU.307-4
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KY-219(2/2)

SECTION 12
SEMICONDUCTOR PIN ASSIGNMENTS

ICs, transistors and diodes that functions are equivalent are described here. Therefore, incompatible device names may be described together. For parts replacement, refer to the Spare Parts section in this manual.

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MC14070BCP 12-18
MC14094BCP 12-18
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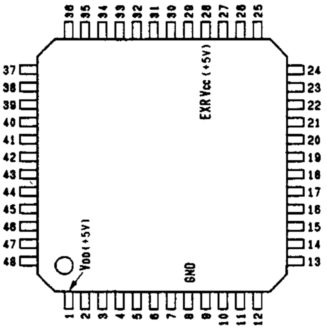
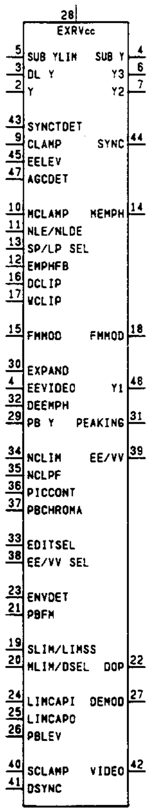
AN3237FB (MATSUSHITA) FLAT PACKAGE

VTR LUMINANCE SIGNAL PROCESSOR

- TOP VIEW -


36 35 34 33 32 31 30 29 28 27 26 25
37 38 39 40 41 42 43 44 45 46 47 48
24 23 22 21 20 19 18 17 16 15 14 13
1 2 3 4 5 6 7 8 9 10 11 12
EXRVcc(+5V)
VDD(+5V)
GND

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	–	Vcc (+5V)	17	I	WCLIP	33	I	EDITSEL
2	I	Y	18	O	FMMOD	34	I	NCLIM
3	I	DL Y	19	I	SLIM/LIMSS	35	I	NCLPF
4	O	SUB Y	20	I	MLIM/DSEL	36	I	PICCONT
5	I	SUB YLIM	21	I	PBFM	37	I	PBCHROMA
6	O	Y3	22	O	DOP	38	I	EE/VV SEL
7	O	Y2	23	I	ENVDET	39	O	EE/VV
8	–	GND	24	I	LIMCAPI	40	I	SCLAMP
9	I	CLAMP	25	O	LIMCAPO	41	I	DSYNC
10	I	MCLAMP	26	I	PBLEV	42	O	VIDEO
11	I	NLE/NLDE	27	O	DEMOD	43	I	SYNCTDET
12	I	EMPHFB	28	–	EXRVcc (+5V)	44	O	SYNC
13	I	SP/LP SEL	29	I	PB Y	45	I	EELEV
14	O	MEMPH	30	I	EXPAND	46	I	EEVIDEO
15	I	FMMOD	31	O	PEAKING	47	I	AGCDET
16	I	DCLIP	32	I	DEEMPH	48	O	Y1


28 EXRVcc
5 SUB YLIM
3 DL Y
2 Y
SUB Y 4
Y3 6
Y2 7
43 SYNCTDET
9 CLAMP
45 EELEV
47 AGCDET
SYNC 44
10 MCLAMP
11 NLE/NLDE
13 SP/LP SEL
12 EMPHFB
16 DCLIP
17 WCLIP
MEMPH 14
15 FMMOD
FMMOD 18
30 EXPAND
4 EEVIDEO
32 DEEMPH
29 PB Y
Y1 48
PEAKING 31
34 NCLIM
35 NCLPF
36 PICCONT
37 PBCHROMA
EE/VV 39
33 EDITSEL
38 EE/VV SEL
23 ENVDET
21 PBFM
19 SLIM/LIMSS
20 MLIM/DSEL
DOP 22
24 LIMCAPI
25 LIMCAPO
26 PBLEV
DEMOD 27
40 SCLAMP
41 DSYNC
VIDEO 42

INPUT

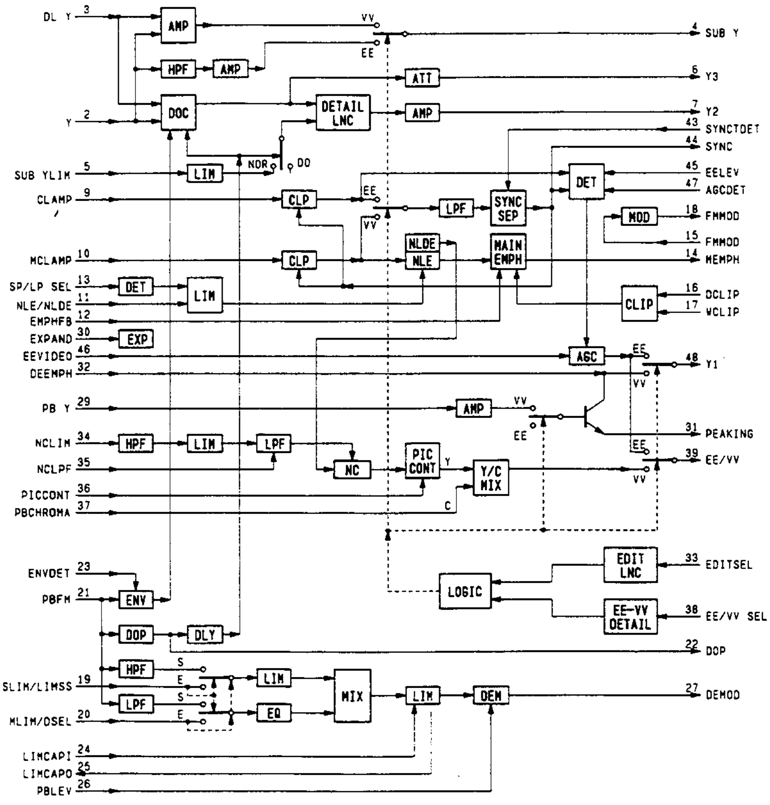
AGCDET : AUTO GAIN CONTROL DETECTION INPUT
CLAMP : CLAMP INPUT
DCLIP : DARK CLIP ADJUSTMENT INPUT
DEEMPH : DEEMPHANSIS INPUT
DL Y : DELAYED (1H) LUMINANCE SIGNAL INPUT
DSYNC : DUMMY SYNC SIGNAL INPUT
EDITSEL : EDIT MODE SELECT INPUT
EE/VV SEL : EE/VV SELECT INPUT
EELEV : EE VIDEO LEVEL ADJUSTMENT INPUT
EEVIDEO : EE VIDEO INPUT
EMPHFB : MAIN EMPHASIS FEEDBACK INPUT
ENVDET : ENVELOPE DETECTION INPUT
EXPAND : EXPANDER INPUT
FMMOD : FM MODULATOR INPUT
LIMCAPI : CAPACITOR CONNECTION FOR MAIN LIMITER
MCLAMP : MAIN CLAMP INPUT
MLIM/DSEL : DOUBLE (MAIN) LIMITER INPUT, WHEN EXTENDED DIFINITION MODE (S-VHS, Hi8 etc.) & DIFINITION SELECT INPUT
NCLIM : LIMITER INPUT FOR NOISE CANCELER
NCLPF : LPF INPUT FOR NOISE CANCELER
NLE/NLDE : NON-LINEAR EMPHASIS/DEEMPHASIS INPUT
PBCHROMA : PLAYBACK CHROMINANCE SIGNAL INPUT
PBFM : PLAYBACK FM SIGNAL INPUT
PBLEV : PLAYBACK LEVEL ADJUSTMENT INPUT
PB Y' : PLAYBACK Y SIGNAL INPUT
PICCONT : PICTURE CONTROL INPUT
SCLAMP : SECAND CLAMP INPUT
SLIM/LIMSS : DOUBLE (SUB) LIMITER INPUT, WHEN EXTENDED DIFINITION MODE (S-VHS, Hi8 etc.) & DOUBLE LIMITER SWITCHOVER STOP INPUT
SP/LP SEL : STANDARD/LONG PLAY MODE SELECT INPUT (FM CARRIER INTERLEAVE PULSE INPUT)
SUB YLIM : LUMINANCE LIMITER INPUT
SYNCTDET : SYNC TIP DETECTION INPUT
WCLIP : WHITE CLIP ADJUSTMENT INPUT
Y : LUMINANCE MAIN SIGNAL INPUT

OUTPUT

DEMOD : FM DEMODULATOR OUTPUT
DOP : DROPOUT PULSE OUTPUT
EE/VV : EE/VV SWITCHOVER OUTPUT
FMMOD : FM MODULATOR OUTPUT
LIMCAPO : CAPACITOR CONNECTION FOR MAIN LIMITER
MEMPH : MAIN EMPHASIS OUTPUT
PEAKING : VIDEO PEAKING OUTPUT
SUB Y : LUMUNANCE SUB SIGNAL OUTPUT
SYNC : COMPOSITE SYNC OUTPUT
VIDEO : COMPOSITE VIDEO OUTPUT
Y1 : Y SIGNAL OUTPUT
Y2 : Y SIGNAL OUTPUT FOR CLAMP
Y3 : Y SIGNAL OUTPUT FOR DELAYED Y

OTHER

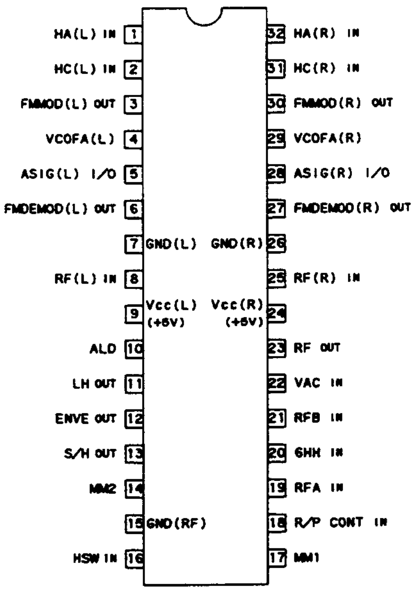
EXRVcc : EXCEPT REC Vcc (+5V)

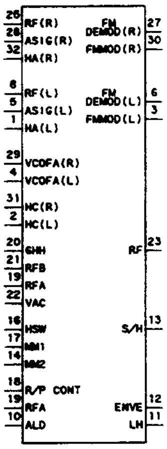

DL Y 3
Y 2
SUB YLIM 5
CLAMP 9
MCLAMP 10
SP/LP SEL 13
NLE/NLDE 11
EMPHFB 12
EXPAND 30
EEVIDEO 46
DEEMPH 32
PB Y 29
NCLIM 34
NCLPF 35
PICCONT 36
PBCHROMA 37
ENVDET 23
PBFM 21
SLIM/LIMSS 19
MLIM/DSEL 20
LIMCAPI 24
LIMCAPO 25
PBLEV 26
SCLAMP 40
DSYNC 41
AMP
HPF
AMP
DOC
DETAIL LNC
ATT
AMP
LIM
NOR
DO
CLP
LPF
SYNC SEP
DET
MOD
CLP
NLDE
NLE
MAIN EMPH
DET
LIM
CLIP
EXP
AGC
AMP
HPF
LIM
LPF
NC
PIC CONT
Y/C MIX
EDIT LNC
LOGIC
EE-VV DETAIL
ENV
DOP
DLY
HPF
LPF
LIM
EQ
MIX
LIM
DEM
CLP
MUTE
AMP
VV
EE
Y
C
S
E
4 SUB Y
6 Y3
7 Y2
43 SYNCTDET
44 SYNC
45 EELEV
47 AGCDET
18 FMMOD
15 FMMOD
14 MEMPH
16 DCLIP
17 WCLIP
48 Y1
31 PEAKING
39 EE/VV
33 EDITSEL
38 EE/VV SEL
22 DOP
27 DEMOD
42 VIDEO

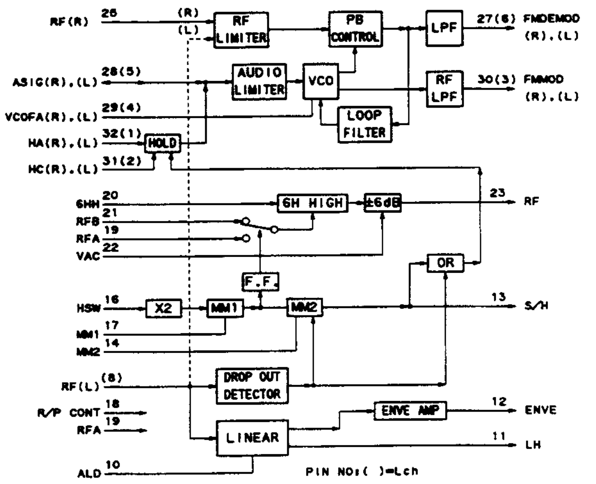
NOTE: S:STANDARD DIFINITION
E:EXTENDED DIFINITION

AN3932S (MATSUSHITA)

FM AUDIO AND FM MAIN FOR VCR
- TOP VIEW -


HA(L) IN 1
HC(L) IN 2
FMMOD(L) OUT 3
VCOFA(L) 4
ASIG(L) I/O 5
FMDEMOD(L) OUT 6
7 GND(L)
RF(L) IN 8
9 Vcc(L) (+5V)
ALD 10
LH OUT 11
ENVE OUT 12
S/H OUT 13
MM2 14
15 GND(RF)
HSW IN 16
32 HA(R) IN
31 HC(R) IN
30 FMMOD(R) OUT
29 VCOFA(R)
28 ASIG(R) I/O
27 FMDEMOD(R) OUT
GND(R) 26
25 RF(R) IN
Vcc(R) (+5V) 24
23 RF OUT
22 VAC IN
21 RFB IN
20 6HH IN
19 RFA IN
18 R/P CONT IN
17 MM1


26 RF(R)
28 ASIG(R)
32 HA(R)
8 RF(L)
5 ASIG(L)
1 HA(L)
29 VCOFA(R)
4 VCOFA(L)
31 HC(R)
2 HC(L)
20 6HH
21 RFB
19 RFA
22 VAC
16 HSW
17 MM1
14 MM2
18 R/P CONT
19 RFA
10 ALD
FM DEMOD(R) 27
FMMOD(R) 30
FM DEMOD(L) 6
FMMOD(L) 3
RF 23
S/H 13
ENVE 12
LH 11


RF(R) 26
(R)
(L)
RF LIMITER
PB CONTROL
LPF
27(6) FMDEMOD (R),(L)
ASIG(R),(L) 28(5)
AUDIO LIMITER
VCO
RF LPF
30(3) FMMOD (R),(L)
VCOFA(R),(L) 29(4)
LOOP FILTER
HA(R),(L) 32(1)
HOLD
HC(R),(L) 31(2)
6HH 20
RFB 21
RFA 19
VAC 22
6H HIGH
±6dB
23 RF
OR
F.F.
HSW 16
X2
MM1
MM2
13 S/H
MM1 17
MM2 14
RF(L) (8)
DROP OUT DETECTOR
R/P CONT 18
RFA 19
ENVE AMP
12 ENVE
LINEAR
11 LH
ALD 10
PIN NO:( )=Lch

INPUT
6HH :6H HIGH
HA(R),(L) :HOLD AMP
HC(R),(L) :HOLD CONTROL
HSW :HOLD SWITCH
RF(R),(L) :RF SIGNAL
RFA :RF INPUT A
RFB :RF INPUT B
R/P CONT :REC/PB CONTROL
VAC :VARIABLE AMP CONTROL

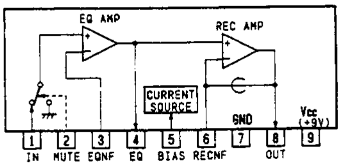
OUTPUT
ENVE :ENVELOPE
FMDEMOD(R),(L) :FM DEMODULATION
FMMOD(R),(L) :FM MODULATION
LH :LINEAR HIGH
RF :RF OUTPUT
S/H :S/H OUTPUT

INPUT/OUTPUT
ASIG:AUDIO SIGNAL

OTHERS
ACD :AUDIO LINEAR DETECTION
MM1 :MONO MULTI1
MM2 :MONO MULTI2
VCOFA(R),(L):VCO FREQUENCY ADJUSTMENT

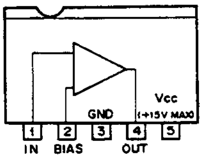
AN6392L (MATSUSHITA)

VIDEO SIGNAL RECODING AMPLIFIER
- PRINTED SIDE VIEW -


EQ AMP
REC AMP
CURRENT SOURCE
GND
Vcc (+9V)
1 IN
2 MUTE
3 EQNF
4 EQ
5 BIAS
6 RECNF
7
8 OUT
9

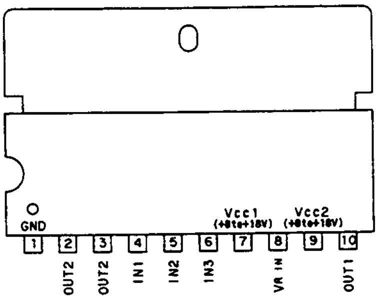
BA401 (ROHM)

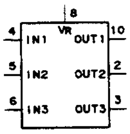
RF AMPLIFIER
- SIDE VIEW -

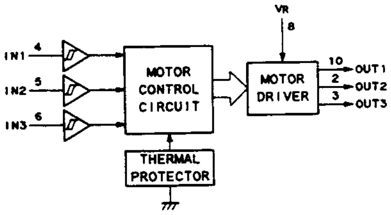

GND
Vcc (+15V MAX)
1 IN
2 BIAS
3
4 OUT
5

BA6238A (ROHM)

FORWARD AND REVERSE MOTOR DRIVER
- SIDE VIEW -


GND
Vcc1 (+8to+18V)
Vcc2 (+8to+18V)
1
2 OUT2
3 OUT2
4 IN1
5 IN2
6 IN3
7
8 VR IN
9 N
10 OUT1


8
VR
4 IN1
5 IN2
6 IN3
OUT1 10
OUT2 2
OUT3 3


VR
8
IN1 4
IN2 5
IN3 6
MOTOR CONTROL CIRCUIT
MOTOR DRIVER
10 OUT1
2 OUT2
3 OUT3
THERMAL PROTECTOR

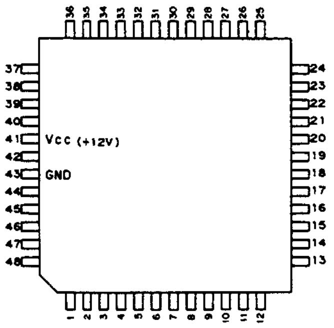
INPUT			OUTPUT			OPERATION
IN1	IN2	IN3	OUT1	OUT2	OUT3	
0	0	X	0	0	0	BRAKE
1	0	0	1	0	OPEN	MOTOR CURRENT OUT1→OUT2
1	0	1	0	1	OPEN	MOTOR CURRENT OUT2→OUT1
0	1	0	1	OPEN	0	MOTOR CURRENT OUT1→OUT3
0	1	1	0	OPEN	1	MOTOR CURRENT OUT3→OUT1
1	1	X	0	0	0	BRAKE

0:LOW LEVEL
1:HIGH LEVEL
X:DON'T CARE

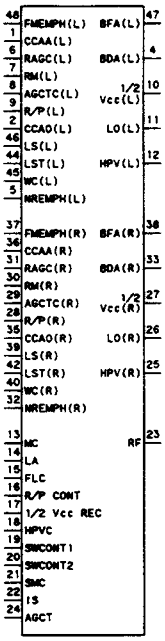
AN3972FC (MATSUSHITA) FLAT PACKAGE

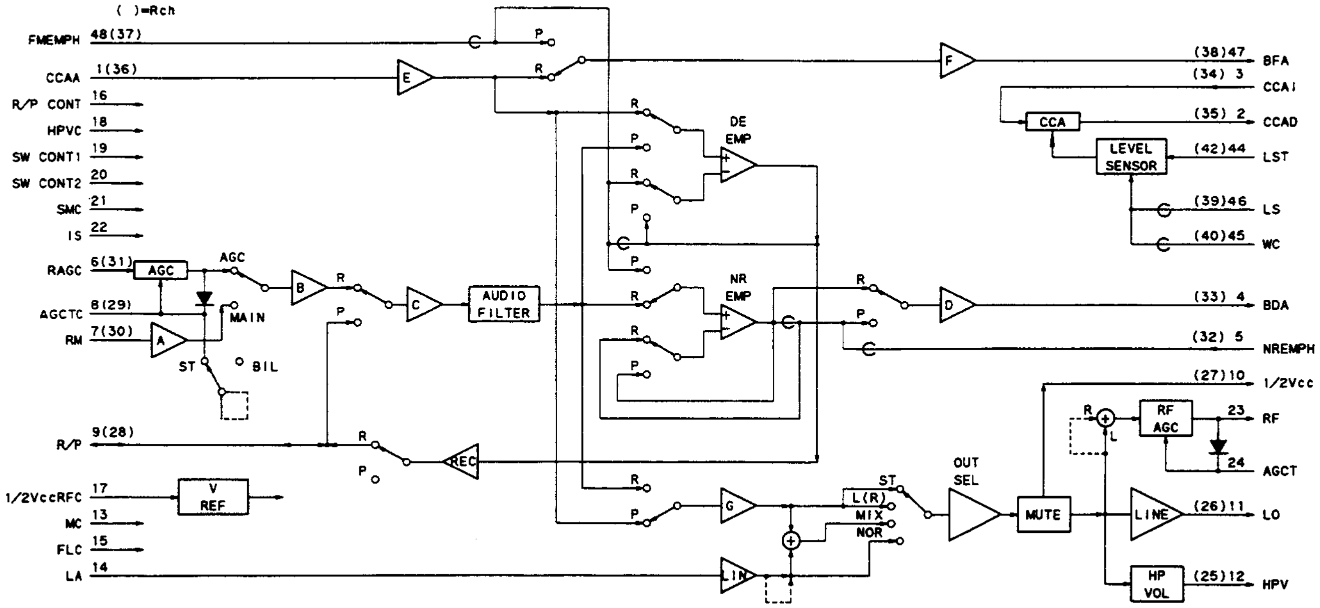
PEAK NOISE REDUCTION FOR HIFI VCR FM AUDIO

– TOP VIEW –


Vcc (+12V)
GND
36 35 34 33 32 31 30 29 28 27 26 25
37 38 39 40 41 42 43 44 45 46 47 48
24 23 22 21 20 19 18 17 16 15 14 13
1 2 3 4 5 6 7 8 9 10 11 12

PIN NO	I/O	SYMBOL	PIN NO	I/O	SYMBOL	PIN NO	I/O	SYMBOL
1	I	CCAA(L)	17	I	1/2VccRFC	33	O	BDA(R)
2	O	CCAO(L)	18	I	HPVC	34	I	CCAI(R)
3	I	CCAI(L)	19	I	SWCONT1	35	O	CCAO(R)
4	O	BDA(L)	20	I	SWCONT2	36	I	CCAA(R)
5	I	NREMPH(L)	21	I	SMC	37	I	FMEMPH(R)
6	I	RAGC(L)	22	I	IS	38	O	BFA(R)
7	I	RM(L)	23	O	RF	39	I	LS(R)
8	I	AGCTC(L)	24	I	AGCT	40	I	WC(R)
9	I/O	R/P(L)	25	O	HPV(R)	41	–	Vcc(+12V)
10	O	1/2 Vcc(L)	26	O	LO(R)	42	I	LST(R)
11	O	LO(L)	27	O	1/2Vcc(R)	43	–	GND
12	O	HPV(L)	28	I/O	R/P(R)	44	I	LST
13	I	MC	29	I	AGCTC(R)	45	I	WC(L)
14	I	LA	30	I	RM(R)	46	I	LS(L)
15	I	FLC	31	I	RAGC(R)	47	O	BFA(L)
16	I	R/P CONT	32	I	NREMPH(R)	48	I	FMEMPH(L)


48 FMEMPH(L)
1 CCAA(L)
6 RAGC(L)
7 RM(L)
8 AGCTC(L)
9 R/P(L)
2 CCAO(L)
46 LS(L)
44 LST(L)
45 WC(L)
5 NREMPH(L)
BFA(L) 47
BDA(L) 4
1/2 Vcc(L) 10
LO(L) 11
HPV(L) 12
37 FMEMPH(R)
36 CCAA(R)
31 RAGC(R)
30 RM(R)
29 AGCTC(R)
28 R/P(R)
35 CCAO(R)
39 LS(R)
42 LST(R)
40 WC(R)
32 NREMPH(R)
BFA(R) 38
BDA(R) 33
1/2 Vcc(R) 27
LO(R) 26
HPV(R) 25
13 MC
14 LA
15 FLC
16 R/P CONT
17 1/2 Vcc REC
18 HPVC
19 SWCONT1
20 SWCONT2
21 SMC
22 IS
24 AGCT
RF 23


( )=Rch
FMEMPH 48(37)
CCAA 1(36)
R/P CONT 16
HPVC 18
SW CONT1 19
SW CONT2 20
SMC 21
IS 22
RAGC 6(31)
AGC
AGCTC 8(29)
RM 7(30)
MAIN
ST
BIL
A
B
C
D
E
F
G
AUDIO FILTER
DE EMP
NR EMP
R
P
R/P 9(28)
REC
1/2VccRFC 17
V REF
MC 13
FLC 15
LA 14
LIN
(38)47 BFA
(34) 3 CCAI
CCA
(35) 2 CCAD
LEVEL SENSOR
(42)44 LST
(39)46 LS
(40)45 WC
(33) 4 BDA
(32) 5 NREMPH
(27)10 1/2Vcc
RF AGC
23 RF
24 AGCT
OUT SEL
ST
L(R)
MIX
NOR
MUTE
LINE
(26)11 LO
HP VOL
(25)12 HPV

INPUT
1/2 Vcc RFC : 1/2 Vcc RIPPLE FILTERER CAPACITOR
AGCT : AGC TIMING FOR RF
AGCTC (L),(R) : AGC TIMING CAPACITOR
CCAA (L),(R) : CCA AMP
CCAI (L),(R) : CCA INPUT
FLC : FORCED LINEAR CONTROL
FMEMPH (L),(R) : FM EMPHASIS CAPACITOR
HPVC : HEADPHONE VOLUME CONTROL DC
IS : REC AGC/MANUAL CONTROL
LA : LINEAR AUDIO
LS (L),(R) : LEVEL SENSOR
LST (L),(R) : LEVEL SENSOR TIMING
MC : MUTING CONTROL

NREMPH (L),(R) : NR EMPHASIS CAPACITOR
RAGC (L),(R) : REC AGC
RM (L),(R) : REC MANUAL
R/P CONT : REC/PB CONTROL
SMC : AGC ST/BILL/OUTPUT MIX CONTROL
SW CONT1 : OUTPUT SWITCHING CONTROL1
SW CONT2 : OUTPUT SWITCHING CONTROL2

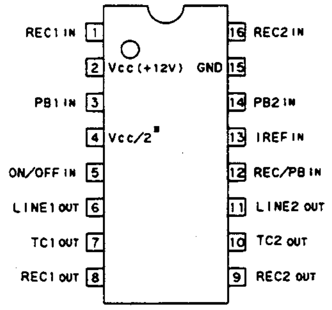
OUTPUT
1/2 Vcc (L),(R) : 1/2 Vcc OUTPUT
BDA (L),(R) : BUFFER D AMP
BFA (L),(R) : BUFFER F AMP
CCAO (L),(R) : CCA OUTPUT
HPV (L),(R) : HEADPHONE VOLUME

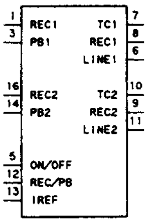
LO (L),(R) ;LINE OUTPUT
RF ;OUTPUT FOR RF

INPUT/OUTPUT
R/P (L),(R);REC OUT/PB IN

CXA1102P (SONY)

DOLBY TYPE-B NOISE REDUCTION SYSTEM
- TOP VIEW -

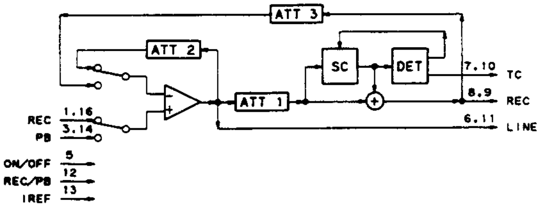

REC1 IN 1
2 Vcc(+12V)
PB1 IN 3
4 Vcc/2*
ON/OFF IN 5
LINE1 OUT 6
TC1 OUT 7
REC1 OUT 8
16 REC2 IN
GND 15
14 PB2 IN
13 IREF IN
12 REC/PB IN
11 LINE2 OUT
10 TC2 OUT
9 REC2 OUT


REC1
PB1
REC2
PB2
ON/OFF
REC/PB
IREF
TC1
REC1
LINE1
TC2
REC2
LINE2

*Vcc/2:SINGLE VOLTAGE :+6V
DOUBLE VOLTAGE :GND

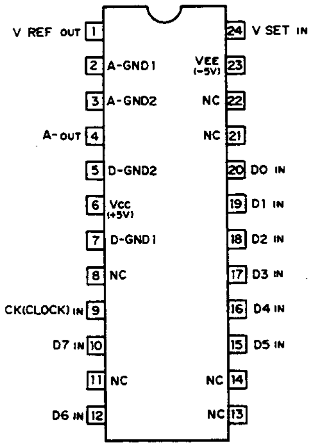
INPUT
IREF :REFERENCE CURRENT SOURCE
ON/OFF:DOLBY NR ON/OFF SELECT(H:OFF/L:ON)
PB :PB(DECODE) INPUT
REC :REC(ENCODE) INPUT
REC/PB:REC/PB SELECT(H:PB/L:REC)

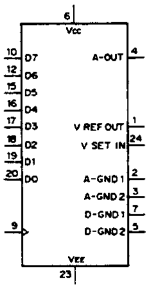
OUTPUT
LINE:LINE(DECODE) OUTPUT
REC :REC(ENCODE) OUTPUT
TC :LEVEL DETECTOR TIME CONSTANT

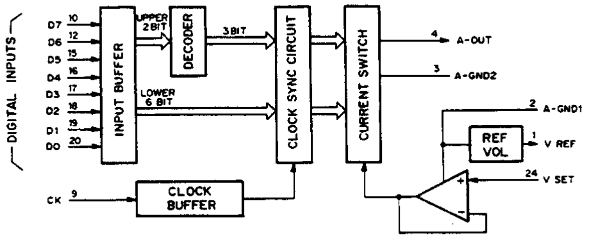

ATT 3
ATT 2
SC
DET
ATT 1
7.10 TC
8.9 REC
6.11 LINE
REC 1.16
PB 3.14
ON/OFF 5
REC/PB 12
IREF 13

CXA1106M (SONY) FLAT PACKAGE

8-BIT D/A CONVERTER (TTL INPUT)
- TOP VIEW -

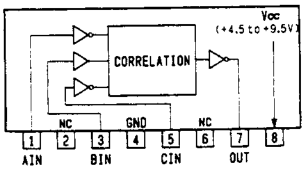

V REF OUT 1
2 A-GND1
3 A-GND2
A-OUT 4
5 D-GND2
6 Vcc (+5V)
7 D-GND1
8 NC
CK(CLOCK) IN 9
D7 IN 10
11 NC
D6 IN 12
24 V SET IN
VEE (-5V) 23
NC 22
NC 21
20 D0 IN
19 D1 IN
18 D2 IN
17 D3 IN
16 D4 IN
15 D5 IN
NC 14
NC 13

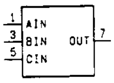

Vcc
D7
D6
D5
D4
D3
D2
D1
D0
A-OUT
V REF OUT
V SET IN
A-GND1
A-GND2
D-GND1
D-GND2
VEE


DIGITAL INPUTS
D7
D6
D5
D4
D3
D2
D1
D0
INPUT BUFFER
UPPER 2BIT
LOWER 6 BIT
DECODER
3BIT
CLOCK SYNC CIRCUIT
CURRENT SWITCH
A-OUT
A-GND2
A-GND1
REF VOL
V REF
V SET
CK
CLOCK BUFFER

CXA1413L (SONY) FLAT PACKAGE

VERTICAL CORRELATOR FOR DYNAMIC COM FILTER
- PRINTED SIDE VIEW -


Vcc (+4.5 to +9.5V)
CORRELATION
NC
GND
NC
AIN
BIN
CIN
OUT

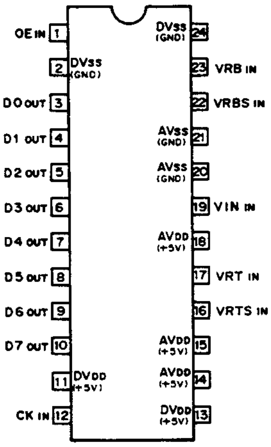

AIN
BIN
CIN
OUT

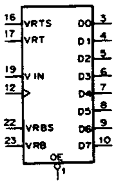
INPUT
AIN :0H INPUT
BIN :1H INPUT
CIN :2H INPUT
(BIASED TO $\frac{V_{CC}}{2}+0.7V$
INPUT RESISTANCE AT 20k-OHM)

OUTPUT
OUT :CORRELATED OUTPUT $\left(\frac{V_{CC}}{2}-0.7V\right)$

CXD1175AM (SONY) FLAT PACKAGE

C-MOS 8-BIT 20MSPS VIDEO A/D CONVERTER
- TOP VIEW -

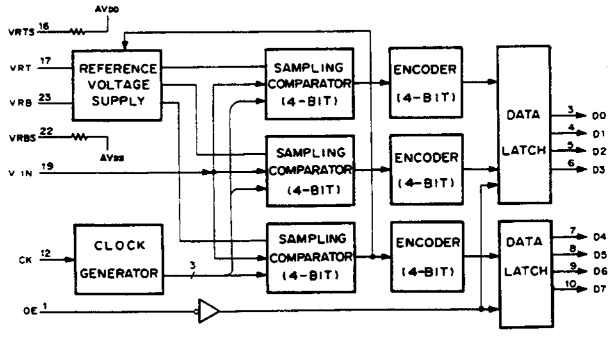

OE IN 1
2 DVSS (GND)
D0 OUT 3
D1 OUT 4
D2 OUT 5
D3 OUT 6
D4 OUT 7
D5 OUT 8
D6 OUT 9
D7 OUT 10
11 DVDD (+5V)
CK IN 12
DVSS (GND) 24
23 VRB IN
22 VRBS IN
AVSS (GND) 21
AVSS (GND) 20
19 VIN IN
AVDD (+5V) 18
17 VRT IN
16 VRTS IN
AVDD (+5V) 15
AVDD (+5V) 14
DVDD (+5V) 13


VRTS
VRT
VIN
VRBS
VRB
OE
D0
D1
D2
D3
D4
D5
D6
D7

AV_{DD} : ANALOG POWER SUPPLY
AV_{SS} : ANALOG GROUND
CK : CLOCK INPUT
D0 – 7 : DIGITAL DATA OUTPUTS (LSB to MSB)
DV_{DD} : DIGITAL POWER SUPPLY
DV_{SS} : DIGITAL GROUND
OE : OUTPUT ENABLE
(OE = HIGH : HIGH IMPEDANCE)
VIN : ANALOG VOLTAGE INPUT
VRB : BOTTOM REFERENCE VOLTAGE INPUT
VRBS : AS SHORT-CIRCUIT AT VRB.
GENERATES + 0.6V
VRT : TOP REFERENCE VOLTAGE INPUT
VRTS : AS SHORT-CIRCUIT AT VRT.
GENERATES + 2.6V

STEP	INPUT SIGNAL VOLTAGE	DATA OUTPUTS							
		D7	D6	D5	D4	D3	D2	D1	D0
0	0V (VRT)	1	1	1	1	1	1	1	1
1	0.01V	1	1	1	1	1	1	1	0
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
127	1.34V	1	0	0	0	0	0	0	0
128	1.35V	0	1	1	1	1	1	1	1
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
255	2.7V (VRB)	0	0	0	0	0	0	0	0

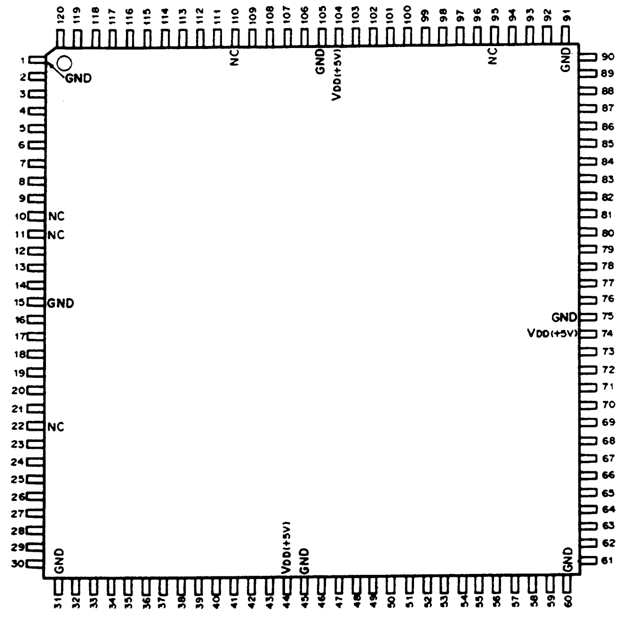
0 : LOW LEVEL
1 : HIGH LEVEL


AVDD
VRTS 16
VRT 17
VRB 23
VRBS 22
AVSS
VIN 19
REFERENCE VOLTAGE SUPPLY
SAMPLING COMPARATOR (4-BIT)
SAMPLING COMPARATOR (4-BIT)
SAMPLING COMPARATOR (4-BIT)
ENCODER (4-BIT)
ENCODER (4-BIT)
ENCODER (4-BIT)
DATA LATCH
DATA LATCH
CLOCK GENERATOR
CK 12
OE 1
3 D0
4 D1
5 D2
6 D3
7 D4
8 D5
9 D6
10 D7

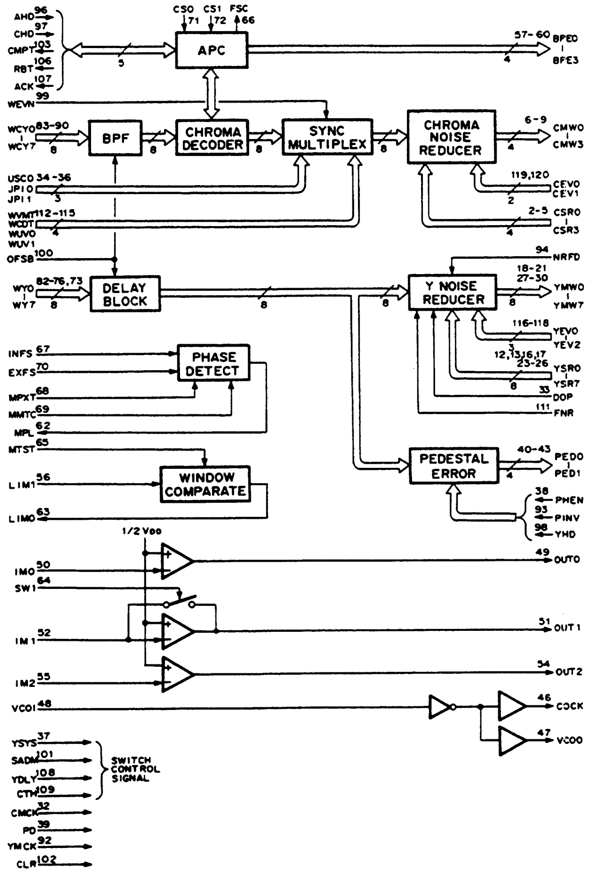
CXD1226Q (SONY) FLAT PACKAGE

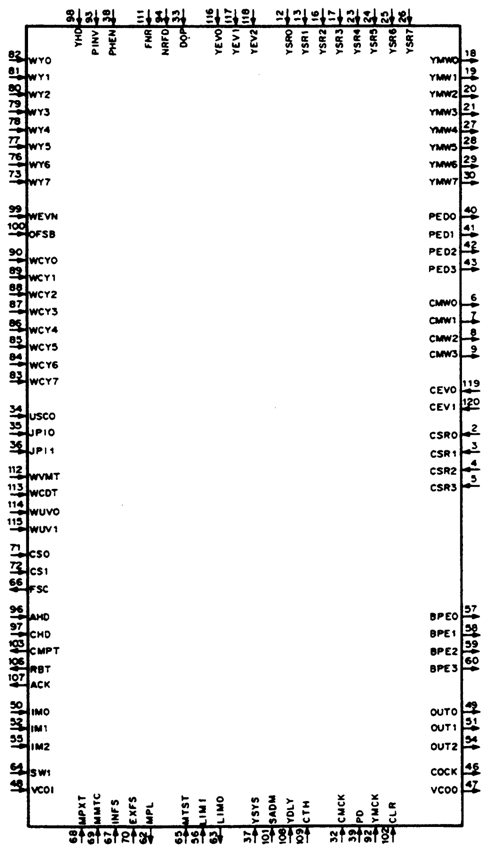
C-MOS DIGITAL CHROMA DECODER/Y. C FIELD NOISE REDUCER

– TOP VIEW –


GND
NC
GND
VDD(+5V)
NC
GND
NC
NC
GND
NC
GND
VDD(+5V)
GND
VDD(+5V)
GND
GND

PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	–	GND	31	–	GND	61	–	GND	91	–	GND
2	I	CSR0	32	I	CMCK	62	O	MPL	92	I	YMCK
3	I	CSR1	33	I	DOP	63	O	LIMO	93	I	PINV
4	I	CSR2	34	I	USC0	64	I	SW1	94	I	NRFD
5	I	CSR3	35	I	JPI0	65	I	MTST	95	–	NC
6	O	CMW0	36	I	JPI1	66	O	FSC	96	I	AHD
7	O	CMW1	37	I	YSYS	67	I	INFS	97	I	CHD
8	O	CMW2	38	I	PHEN	68	I	MPXT	98	I	YHD
9	O	CMW3	39	I	PD	69	I	MMTC	99	I	WEVN
10	–	NC	40	O	PED0	70	I	EXFS	100	I	OFSB
11	–	NC	41	O	PED1	71	I	CS0	101	I	SADM
12	I	YSR0	42	O	PED2	72	I	CS1	102	I	CLR
13	I	YSR1	43	O	PED3	73	I	WY7	103	O	CMPT
14	–	VDD (+5V)	44	–	VDD (+5V)	74	–	VDD (+5V)	104	–	VDD (+5V)
15	–	GND	45	–	GND	75	–	GND	105	–	GND
16	I	YSR2	46	O	COCK	76	I	WY6	106	O	RBT
17	I	YSR3	47	O	VCOO	77	I	WY5	107	O	ACK
18	O	YMW0	48	I	VCOI	78	I	WY4	108	I	YDLY
19	O	YMW1	49	O	OUT0	79	I	WY3	109	I	CTH
20	O	YMW2	50	I	IM0	80	I	WY2	110	–	NC
21	O	YMW3	51	O	OUT1	81	I	WY1	111	I	FNR
22	–	NC	52	I	IM1	82	I	WY0	112	I	WVMT
23	I	YSR4	53	–	AG	83	I	WCY7	113	I	WCDT
24	I	YSR5	54	O	OUT2	84	I	WCY6	114	I	WUV0
25	I	YSR6	55	I	IM2	85	I	WCY5	115	I	WUV1
26	I	YSR7	56	I	LIMI	86	I	WCY4	116	I	YEV0
27	O	YMW4	57	O	BPE0	87	I	WCY3	117	I	YEV1
28	O	YMW5	58	O	BPE1	88	I	WCY2	118	I	YEV2
29	O	YMW6	59	O	BPE2	89	I	WCY1	119	I	CEV0
30	O	YMW7	60	O	BPE3	90	I	WCY0	120	I	CEV1


AHD 96
CHD 97
CMPT 103
RBT 106
ACK 107
WEVN 99
CS0 71
CS1 72
FSC 66
APC
57-60 BPE0 BPE3
WCY0 WCY7 83-90
BPF
CHROMA DECODER
SYNC MULTIPLEX
CHROMA NOISE REDUCER
6-9 CMW0 CMW3
USC0 JPI0 JPI1 34-36
WVMT WCDT WUV0 WUV1 112-115
119,120 CEV0 CEV1
2-5 CSR0 CSR3
OFSB 100
WY0 WY7 82-76,73
DELAY BLOCK
94 NRFD
Y NOISE REDUCER
18-21 27-30 YMW0 YMW7
116-118 YEV0 YEV2
12,13,16,17 23-26 YSR0 YSR7
33 DOP
111 FNR
INFS 67
EXFS 70
PHASE DETECT
MPXT 68
MMTC 69
MPL 62
MTST 65
LIMI 56
WINDOW COMPARATE
LIMO 63
PEDESTAL ERROR
40-43 PED0 PED1
38 PHEN
93 PINV
98 YHD
1/2 VDD
IM0 50
SW1 64
49 OUT0
IM1 52
51 OUT1
IM2 55
54 OUT2
VCOI 48
46 COCK
47 VCOO
YSYS 37
SADM 101
YDLY 108
CTH 109
CMCK 32
PD 39
YMCK 92
CLR 102
SWITCH CONTROL SIGNAL


YHD
PINV
PHEN
FNR
NRFD
DOP
YEV0
YEV1
YEV2
YSR0
YSR1
YSR2
YSR3
YSR4
YSR5
YSR6
YSR7
WY0
WY1
WY2
WY3
WY4
WY5
WY6
WY7
WEVN
OFSB
WCY0
WCY1
WCY2
WCY3
WCY4
WCY5
WCY6
WCY7
USC0
JPI0
JPI1
WVMT
WCDT
WUV0
WUV1
CS0
CS1
FSC
AHD
CHD
CMPT
RBT
ACK
IM0
IM1
IM2
SW1
VCOI
YMW0
YMW1
YMW2
YMW3
YMW4
YMW5
YMW6
YMW7
PED0
PED1
PED2
PED3
CMW0
CMW1
CMW2
CMW3
CEV0
CEV1
CSR0
CSR1
CSR2
CSR3
BPE0
BPE1
BPE2
BPE3
OUT0
OUT1
OUT2
COCK
VCOO
MPXT
MMTC
INFS
EXFS
MPL
MTST
LIMI
LIMO
YSYS
SADM
YDLY
CTH
CMCK
PD
YMCK
CLR

INPUT

	AG	: ANALOG GND
	AHD	: H SYNC INPUT FOR APC
*3	CEV0. 1	: C NOISE REDUCER MODE SELECT INPUTS
	CHD	: H SYNC INPUT FOR BURST DETECT
	CLR	: DIRECT CLEAR INPUT
	CMCK	: CLOCK INPUT FOR CHROMA SYSTEM
	CSR0 – CSR3	: CHROMA READ DATA INPUTS
*1	CS0. 1	: CHROMA SYSTEM SELECT INPUTS
	CTH	: CHROMA TEST TERMINAL
	DOP	: DROPOUT CONPENSATION PULSE INPUT
	EXFS	: EXTERNAL Fsc INPUT
	FNR	: NOISE REDUCER ON/OFF CNTROL INPUT
	IM0 – IM2	: AUDIO RANGE AMP INPUTS
	INFS	: INTERNAL Fsc INPUT
	JPI0. 1	: ID CODE MONITOR INPUTS (D2. D3)
	LIMI	: WINDOW COMPARATOR INPUT
	MMTC. MPXT. MTST. PD	: TEST PIN
	NRFD	: Y FIELD NOISE REDUCER DATA INPUT
	OFSB	: OFF SET BINARY MODE INPUT
	PHEN	: CHROMA APC SYSTEM CONTROL INPUT
	PINV	: PEDESTAL CLAMP ERROR INVERT INPUT
	SADM	: Y/C SIGNAL. H : COMPOSITE SIGNAL SELECT INPUT
	SW1	: AUDIO RANGE SWITCH INPUT
	USC0	: USER CODE FOR OPTION
	VCOI	: VCO INPUT
	WCDT	: WRITE FRAMING CODE TIMING INPUT
	WCY0 – WCY7	: L CHROMA SIGNAL. H : COMPOSITE SIGNAL INPUTS
	WEVN	: WRITE EVEN/ODD FIELD MONITOR INPUT
	WUV0. 1	: WRITE U/V TIMING INPUTS
	MVMT	: WRITE VIDEO MUTE
	WY0 – WY7	: WRITE Y SIGNAL INPUTS
	YDLY	: Y DELAY ADJUST INPUT
*2	YEV0 – YEV2	: Y NOISE REDUCER MODE SELECT INPUTS
	YHD	: Y H DRIVE PULSE INPUT
	YMCK	: Y MEMORY CONTROL CLOCK INPUT
	YSR0 – YSR7	: Y MEMORY DATA INPUTS
	YSYS	: Y DELAY ADJUST INPUT (H : 3.58MHz C SYSTEM. L : 4.43MHz C SYSTEM)

OUTPUT

ACK	: CLOCK OUTPUT FOR APC (H : B/W MODE. L : COLOR MODE)
BPE0 – BPE3	: PHASE ERROR OUTPUTS FOR APC (OFFSET BINARY OUTPUTS)
CMPT	: MONITOR TERMINAL FOR TEST
CMW0 – CMW3	: CHROMA WRITE DATA OUTPUTS
COCK	: VCO OUT CLOCK OUTPUT
FSC	: 1/4 CLOCK OUTPUT
LIMO	: WINDOW COMPARATOR OUTPUT
MPL	: PHASE COMPARATOR ERROR OUTPUT
OUT0 – OUT2	: AUDIO RANGE AMP OUTPUTS
PED0 – PED3	: PEDESTAL CLAMP ERROR OUTPUTS
RBT	: MONITOR PIN FOR TEST
VCOO	: VCO OUTPUT
YMW0 – YMW7	: Y MEMORY DATA OUTPUTS

*1 CHROMA SYSTEM MODE SELECTION

CS1	CS0	MODE
0	0	NTSC
0	1	PAL
1	0	CHROMA BASE BAND INPUT
1	1	PROHIBITION

*3 CHROMA SIGNAL NOISE REDUCER SELECTION

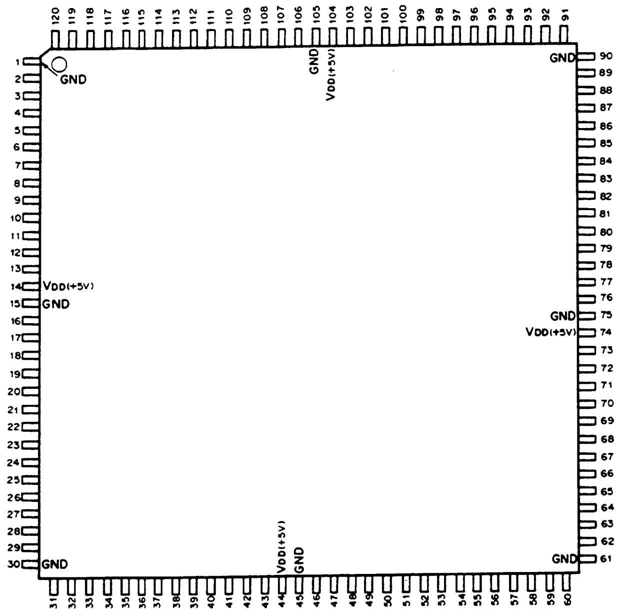
CEV0	CEV1	OPERATION
0	0	NOISE REDUCER (SOFT)
0	1	NOISE REDUCER (MIDDLE)
1	0	NOISE REDUCER (STRONG)
1	1	NO OPERATION

0 : LOW LEVEL
1 : HIGH LEVEL

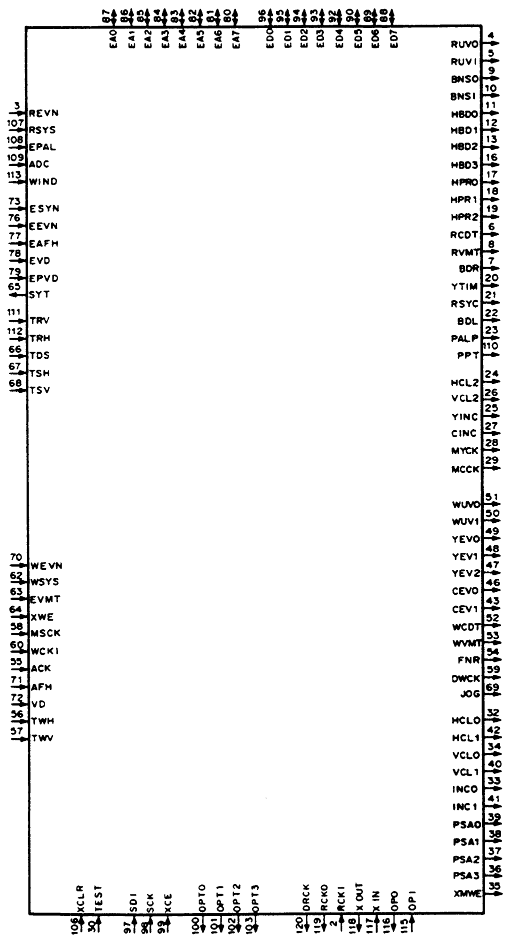
*2 Y SIGNAL NOISE REDUCER SELECTION

YEV0	YEV1	YEV2	OPERATION
0	0	0	NOISE REDUCER (SOFT)
0	0	1	NOISE REDUCER (MIDDLE)
0	1	0	NOISE REDUCER (STRONG)
0	1	1	AFTER IMAGE
1	0	0	VERTICAL FILTER
1	0	1	FADE IN/OUT
1	1	0	SELECT AFTER IMAGE
1	1	1	NO OPERATION

CXD1228Q (SONY) FLAT PACKAGE
C-MOS MEMORY ADDRESS CONTROLLER
- TOP VIEW -



PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	–	GND	31	–	GND	61	–	GND	91	–	GND
2	I	RCK1	32	O	HCL0	62	I	WSYS	92	I/O	ED4
3	I	REVN	33	O	INC0	63	I	EVMT	93	I/O	ED3
4	O	RUV0	34	O	VCL0	64	I	XWE	94	I/O	ED2
5	O	RUV1	35	O	XMWE	65	O	SYT	95	I/O	ED1
6	O	RCDT	36	O	PSA3	66	I	TDS	96	I/O	ED0
7	O	BDR	37	O	PSA2	67	I	TSH	97	I	SD1
8	O	RVMT	38	O	PSA1	68	I	TSV	98	I	SDK
9	O	BNS0	39	O	PSA0	69	O	JOG	99	I	XCE
10	O	BNS1	40	O	VCL1	70	I	WEVN	100	O	OPT0
11	O	HBD0	41	O	INC1	71	I	AFH	101	O	OPT1
12	O	HBD1	42	O	HCL1	72	I	VD	102	O	OPT2
13	O	HBD2	43	O	CEV1	73	I	ESYN	103	O	OPT3
14	–	VDD (+5V)	44	–	VDD (+5V)	74	–	VDD (+5V)	104	–	VDD (+5V)
15	–	GND	45	–	GND	75	–	GND	105	–	GND
16	O	HBD3	46	O	CEV0	76	I	EEVN	106	I	XCLR
17	O	HPR0	47	O	YEV2	77	I	EAFH	107	I	RSYS
18	O	HPR1	48	O	YEV1	78	I	EVD	108	I	EPAL
19	O	HPR2	49	O	YEV0	79	I	EPVD	109	I	ADC
20	O	YTIM	50	O	WUV1	80	I/O	EA7	110	O	PPT
21	O	RSYC	51	O	WUV0	81	I/O	EA6	111	I	TRV
22	O	BDL	52	O	WCDT	82	I/O	EA5	112	I	TRH
23	O	PALP	53	O	WVMT	83	I/O	EA4	113	I	WIND
24	O	HCL2	54	O	FNR	84	I/O	EA3	114	O	VPER
25	O	YINC	55	I	ACK	85	I/O	EA2	115	I	OPI
26	O	VCL2	56	I	TWH	86	I/O	EA1	116	O	OPO
27	O	CINC	57	I	TWV	87	I/O	EA0	117	I	XIN
28	O	MYCK	58	I	MSCK	88	I/O	ED7	118	O	XOUT
29	O	MCCK	59	O	DWCK	89	I/O	ED6	119	O	RCKO
30	I	TST	60	I	WCKI	90	I/O	ED5	120	O	DRCK



INPUT
ACK : CLOCK INPUT FOR APC (H : B/W MODE. L : COLOR MODE)
ADC : CHROMA ADDRESS CONTROL INPUT
AFH : AFC H DRIVE INPUT
EAFH : EXTERNAL SYNC MODE H DRIVE INPUT
EEVN : EXTERNAL SYNC MODE EVEN/ODD SELECT INPUT
EPAL : EXTERNAL SYNC MODE PAL COLOR ID INPUT
EPVD : REFERENCE VD
ESYN : EXTERNAL SYNC MODE CHROMA SYNC INPUT
EVD : EXTERNAL SYNC MODE V DRIVE INPUT
EVMT : EXTERNAL VIDEO MUTE INPUT (H : MUTE. L : NORMAL)
MSCK : MASTER CLOCK INPUT
OPI : INVERTER INPUT
RCKI : READ CLOCK INPUT
REVN : READ EVEN/ODD FIELD MONITOR INPUT
RSYS : READ SYNC SELECT INPUT (H : NTSC. L : PAL)
SDI : SERIAL DATA INPUT
SDK : SERIAL CLOCK INPUT
TDS. TRH. TRV. TSH
TST. TSV. TWH. TWV
: TEST PIN
VD : VERTICAL SYNC DETECT INPUT
WCKI : WRITE CLOCK INPUT
WEVN : WRITE EVEN/ODD FIELD MONITOR INPUT
WIND : WINDOW COMPARATOR INPUT FOR V-PLL
WSYS : WRITE SYNC SELECT INPUT (H : NTSC. L : PAL)
XCE : CHIP ENABLE INPUT
XCLR : DIRECT CLEAR INPUT
XIN : CLOCK INPUT
XWE : WRITE ENABLE INPUT

＊1 SOLORIZATION RESOLUTION

INPUTS		OUTPUTS				
BNS0	BNS1	RY0	RY1	RY2	RY3	RY4
0	0	0	0	1	X	X
0	1	0	0	0	1	X
1	0	0	0	0	0	1
1	1	X	X	X	X	X

＊2 CHROMA SIGNAL NOISE REDUCER SELECTION

CEV0	CEV1	OPERATION
0	0	NOISE REDUCER (SOFT)
0	1	NOISE REDUCER (MIDDLE)
1	0	NOISE REDUCER (STRONG)
1	1	NO OPERATION

＊3 U-AXIS BORDER LEVEL

HBD1	HBD0	LEVEL
0	0	20 IRE
0	1	– 20 IRE
1	0	– 30 IRE
1	1	0 IRE

＊4 V-AXIS BORDER LEVEL

HBD3	HBD2	LEVEL
0	0	20 IRE
0	1	– 20 IRE
1	0	– 30 IRE
1	1	0 IRE

＊5 H PROCESS MODE SELECTION

HPR2	HPR1	HPR0	OPERATION
0	0	0	V-ENHANCE (SOFT)
0	0	1	V-ENHANCE (SOFT)
0	1	0	V-ENHANCE (MIDDLE)
0	1	1	V-ENHANCE (STRONG)
1	0	0	MIX RATIO H_T:H_P=1:1
1	0	1	MIX RATIO H_T:H_P=1:3
1	1	0	MIX RATIO H_T:H_P=3:1
1	1	1	NO PLAY

0 : LOW LEVEL
1 : HIGH LEVEL

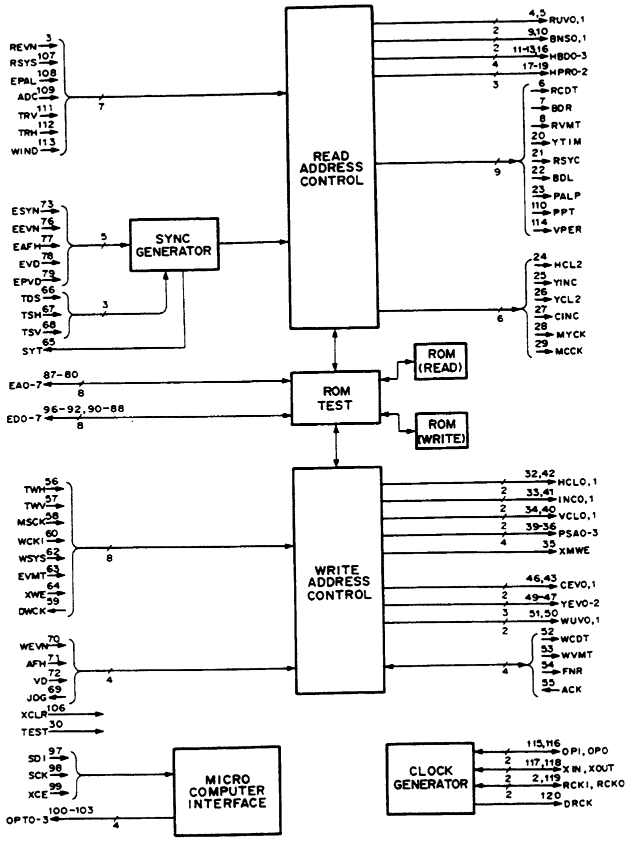
H_T = THROUGH
H_P = 1H DELAY

OUTPUT
BDL : Y BORDER LEVEL OUTPUT
BDR : BORDER OUTPUT
＊1 BNS0. 1 : SOLARIZATION CONROL OUTPUTS
＊2 CEV0. 1 : C NOISE REDUCER MODE SELECT OUTPUTS
CINC : READ PORT CHROMA INCREMENT OUTPUT
DRCK : DELAYED READ CLOCK OUTPUT
DWCK : DELAYED WRITE CLOCK OUTPUT
FNR : NOISE REDUCER ON/OFF CONTROL OUTPUT
＊3 HBD0. 1 : U-AXIS BORDER LEVEL OUTPUTS
＊4 HBD2. 3 : V-AXIS BORDER LEVEL OUTPUTS
HCL0 : WRITE PORT HORIZONTAL CLEAR OUTPUT
HCL1. 2 : READ PORT HORIZONTAL CLEAR OUTPUTS
＊5 HPR0 – HPR2 : H PROCESS OUTPUTS
INC0 : WRITE PORT LINE INCREMENT OUTPUT
INC1 : READ PORT LINE INCREMENT OUTPUT
JOG : REFERENCE CONTROL OUTPUT
MCCK : READ PORT CHROMA CLOCK OUTPUT
MYCK : READ PORT Y CLOCK OUTPUT
OPO : INVERTER OUTPUT
OPT0 – OPT3 : OPTION OUTPUTS
PALP : PAL PHASE CONTROL OUTPUT
PPT : SMALL PICTURE TIMING OUT
PSA0 – PSA3 : WRITE PORT TRANSFER SYNC OUTPUTS
RCDT : READ FRAIMIG CODE TIMING OUTPUT
RCK0 : READ CLOCK OUTPUT
RUV0. 1 : READ U/V TIMING OUTPUTS
RVMT : READ MUTING OUTPUT
SYT : MONITOR PIN FOR TEST
VCL0 : WRITE PORT VERTICAL CLEAR OUTPUT
VCL1. 2 : READ PORT VERTICAL CLEAR OUTPUTS
VPER : V PHASE COMPARATOR OUTPUT
WCDT : WRITE FRAMING CODE TIMING OUTPUT
WUV0. 1 : WRITE U/V TIMING OUTPUTS
WVMT : WRITE VIDEO MUTE OUTPUT
XMWE : WRITE PORT WRITE ENABLE OUTPUT
XOUT : CLOCK OUTPUT
＊6 YEV0 – YEV2 : Y NOISE REDUCER MODE SELECT OUTPUTS
YINC : READ PORT Y INCREMENT OUTPUT
YTIM : Y TIMING CONTROL OUTPUT

INPUT/OUTPUT
EA0 – EA7 : ROM TEST TERMINAL INPUTS/OUTPUTS
ED0 – ED7 : ROM TEST TERMINAL INPUTS/OUTPUTS

＊6 Y SIGNAL NOISE REDUCER SELECTION

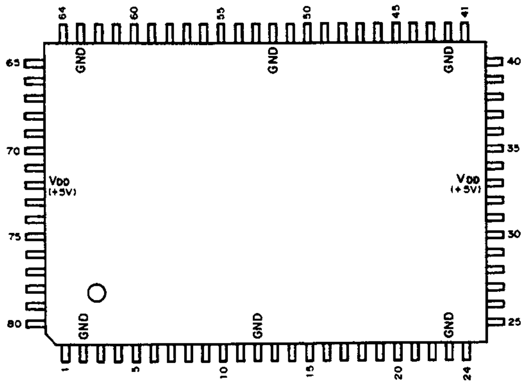
YEV0	YEV1	YEV2	OPERATION
0	0	0	NOISE REDUCER (SOFT)
0	0	1	NOISE REDUCER (MIDDLE)
0	1	0	NOISE REDUCER (STRONG)
0	1	1	AFTER IMAGE
1	0	0	VERTICAL FILTER
1	0	1	FADE IN/OUT
1	1	0	SELECT AFTER IMAGE
1	1	1	NO OPERATION



CXD1227Q (SONY)

C-MOS DIGITAL CHROMA ENCODER/VERTICAL ENHANCER

– TOP VIEW –


64
60
55
50
45
41
65
40
70
35
75
30
80
25
1
5
10
15
20
24
GND
GND
GND
GND
GND
GND
VDD (+5V)
VDD (+5V)

PIN ASSIGNMENT (VDD = + 5V)

PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	O	TST0	21	I	CMR3	41	I	HPR2	61	I	CCKI
2	–	GND	22	I	CMR2	42	–	GND	62	O	CCKO
3	O	TST1	23	–	GND	43	O	DOC	63	–	GND
4	O	RC0	24	I	CMR1	44	I	HPR1	64	O	XOUT
5	O	RC1	25	I	CMR0	45	I	HPR0	65	I	XIN
6	O	RC2	26	O	FRM0	46	I	HBD3	66	O	USCO
7	O	RC3	27	O	FRM1	47	I	HBD2	67	I	CLRI
8	O	RC4	28	O	JPI0	48	I	HBD1	68	O	PCOM
9	O	RC5	29	O	JPI1	49	I	HBD0	69	I	CTLZ
10	O	RC6	30	O	RFSC	50	I	BNS1	70	I	FSIG
11	O	RC7	31	I	CS0	51	I	BNS0	71	I	FREF
12	–	GND	32	I	CS1	52	–	GND	72	O	RY0
13	I	YMR7	33	–	VDD	53	I	YCKI	73	–	VDD
14	I	YMR6	34	I	SDAM	54	I	RVMT	74	O	RY1
15	I	YMR5	35	I	PALP	55	I	BDR	75	O	RY2
16	I	YMR4	36	I	OFSB	56	I	YCFR	76	O	RY3
17	I	YMR3	37	I	BDL7	57	I	RCDT	77	O	RY4
18	I	YMR2	38	I	BDL6	58	I	RUV1	78	O	RY5
19	I	YMR1	39	I	RSYC	59	I	RUV0	79	O	RY6
20	I	YMR0	40	I	YTIM	60	O	REVN	80	O	RY7

INPUT

	BDR	: BORDER TIMING INPUT
* 1	BDL6, 7	: Y BORDER LEVEL SELECT INPUTS
* 2	BNS0, 1	: SOLORIZATION RESOLUTION SELECT
	CCKI	: CHROMA CLOCK INPUT (4fsc)
	CLRI	: CLEAR INPUT
	CMR0 – 3	: CHROMA DATA INPUTS
* 3	CS0, 1	: CHROMA SYSTEM SELECT INPUTS
	CTLZ	: PHASE COMPARATOR OUT CONTROL INPUT
	FREF	: PHASE COMPARATOR REFERRENCE SIGNAL INPUT
	FSIG	: PHASE COMPARATOR SIGNAL INPUT
* 4	HBD0, 1	: U-AXIS BORDER LEVEL INPUTS
* 5	HBD2, 3	: V-AXIS BORDER LEVEL INPUTS
* 6	HPR0 – 2	: H PROCESS INPUTS
	OFSB	: OFF SET BINARY MODE INPUT
	PALP	: PAL PHASE CONTROL INPUT
	RCDT	: READ FRAMING CODE TIMING INPUT
	RSYC	: READ SYNC INPUT
	RUV0 – 1	: READ U/V TIMING INPUTS
	RVMT	: READ VIDEO MUTE INPUT
	SDAM	: D/A MODE SELECT INPUT
	XIN	: CHROMA CLOCK INPUT FOR OSCILLATOR
	YCKI	: Y CLOCK INPUT (910f_H)
	YCFR	: Y/C FRAMING ON/OFF SELECT INPUT
	YMR0 – 7	: Y DATA INPUTS
	YTIM	: Y TIMING CONTROL INPUT

OUTPUT

CCKO	: CHROMA CLOCK OSCILLATOR OUTPUT (4fsc)
DOC	: DROP OUT CONTROL MONITOR OUTPUT
FRM0, 1	: CHROMA FRAMING CODE OUTPUTS
JPI0, 1	: ID CODE MONITOR OUTPUTS (D2, D3)
PCOM	: PHASE COMPARATOR OUTPUT
RC0 – 7	: READ CHROMA D/A OUTPUTS
REVN	: READ EVEN/$\overline{\text{ODD}}$ FIELD MONITOR OUTPUT
RFSC	: READ fsc OUTPUT
RY0 – 7	: READ Y D/A OUTPUTS
TST0, 1	: TEST TERMINALS
USCO	: USER CODE FOR OPTION
XOUT	: CHROMA CLOCK OUTPUT FOR OSCILLATOR

TABLE 1

* 1 BORDER LEVEL

BDL7	BDL6	LEVEL
0	0	8H (– 50IRE)
0	1	48H (– 100IRE)
1	0	C8H (CLAMP LEVEL)
1	1	C8H (0IRE)

TABLE 2

* 2 SOLORIZATION RESOLUTION

INPUTS		OUTPUTS				
BNS0	BNS1	RY0	RY1	RY2	RY3	RY4
0	0	0	0	1	X	X
0	1	0	0	0	1	X
1	0	0	0	0	0	1
1	1	X	X	X	X	X

TABLE 3

* 3 CHROMA SYSTEM MODE SELECTION

CS1	CS0	MODE
0	0	NTSC
0	1	PAL
1	0	CHROMA BASE BAND OUT
1	1	(PAL)

TABLE 4

* 4 U-AXIS BORDER LEVEL

HBD1	HBD0	LEVEL
0	0	20 IRE
0	1	– 20 IRE
1	0	– 30 IRE
1	1	0 IRE

TABLE 5

* 5 V-AXIS BORDER LEVEL

HBD3	HBD2	LEVEL
0	0	20 IRE
0	1	– 20 IRE
1	0	– 30 IRE
1	1	0 IRE

TABLE 6

* 6 H PROCESS MODE SELECTION

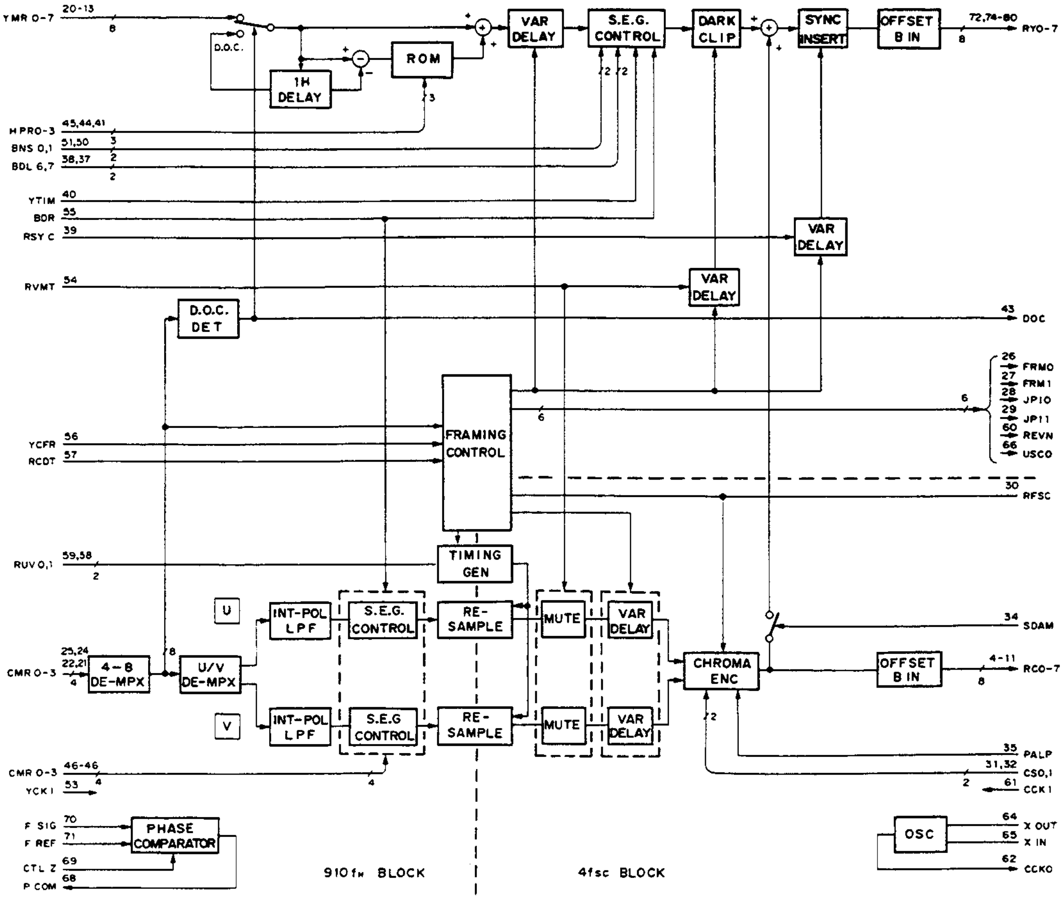
HPR2	HPR1	HPR0	OPERATION
0	0	0	V-ENHANCE (SOFT)
0	0	1	V-ENHANCE (SOFT)
0	1	0	V-ENHANCE (MIDDLE)
0	1	1	V-ENHANCE (STRONG)
1	0	0	MIX RATIO H_T:H_P=1:1
1	0	1	MIX RATIO H_T:H_P=1:3
1	1	0	MIX RATIO H_T:H_P=3:1
1	1	1	NO PLAY

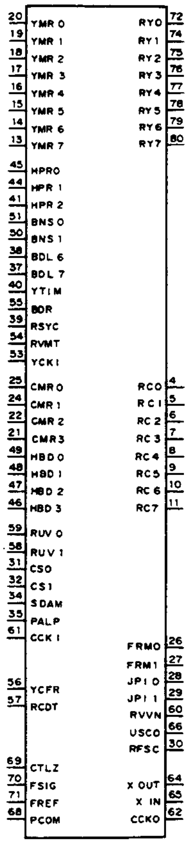
0 : LOW LEVEL

1 : HIGH LEVEL

H_T = THROUGH

H_P = 1H DELAY

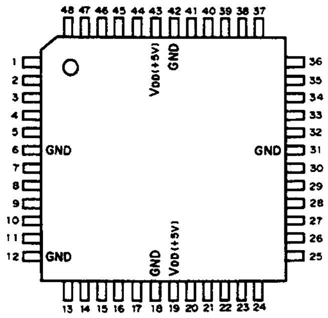

YMR 0-7
20-13
8
D.O.C.
1H DELAY
ROM
VAR DELAY
S.E.G. CONTROL
DARK CLIP
SYNC INSERT
OFFSET B IN
72,74-80
RY0-7
HPR0-3
45,44,41
BNS 0,1
51,50
BDL 6,7
38,37
YTIM
40
BDR
55
RSYC
39
VAR DELAY
RVMT
54
VAR DELAY
D.O.C. DET
43
DOC
26 FRM0
27 FRM1
28 JPI0
29 JPI1
60 REVN
66 USCO
FRAMING CONTROL
YCFR
56
RCDT
57
30
RFSC
RUV 0,1
59,58
TIMING GEN
U
V
INT-POL LPF
S.E.G. CONTROL
RE-SAMPLE
MUTE
VAR DELAY
CHROMA ENC
34
SDAM
OFFSET B IN
4-11
RC0-7
CMR 0-3
25,24
22,21
4-8 DE-MPX
U/V DE-MPX
35
PALP
31,32
CS0,1
61
CCKI
CMR 0-3
46-46
YCKI
53
F SIG
70
F REF
71
PHASE COMPARATOR
CTL Z
69
P COM
68
OSC
64
X OUT
65
X IN
62
CCKO
910fH BLOCK
4fsc BLOCK


20 YMR 0
19 YMR 1
18 YMR 2
17 YMR 3
16 YMR 4
15 YMR 5
14 YMR 6
13 YMR 7
45 HPR0
44 HPR 1
41 HPR 2
51 BNS 0
50 BNS 1
38 BDL 6
37 BDL 7
40 YTIM
55 BDR
39 RSYC
54 RVMT
53 YCKI
25 CMR0
24 CMR 1
22 CMR 2
21 CMR3
49 HBD 0
48 HBD 1
47 HBD 2
46 HBD 3
59 RUV 0
58 RUV 1
31 CS0
32 CS1
34 SDAM
35 PALP
61 CCK I
56 YCFR
57 RCDT
69 CTLZ
70 FSIG
71 FREF
68 PCOM
RY0 72
RY1 74
RY2 75
RY3 76
RY4 77
RY5 78
RY6 79
RY7 80
RC0 4
RC1 5
RC 2 6
RC 3 7
RC 4 8
RC5 9
RC 6 10
RC7 11
FRM0 26
FRM1 27
JP1 0 28
JP1 1 29
RVVN 60
USCO 66
RFSC 30
X OUT 64
X IN 65
CCKO 62

CXD1229Q (SONY) FLAT PACKAGE

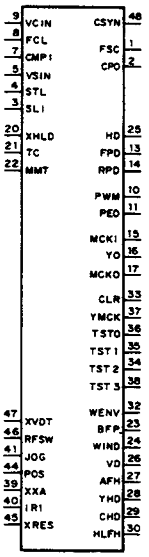
C-MOS AUTOMATIC FREQUENCY CONTROL (AFC) /SYNC SEPARATOR

- TOP VIEW -


GND
VDD(+5V)
GND
GND
GND
VDD(+5V)

PIN ASSIGNMENT (VDD = + 5V)

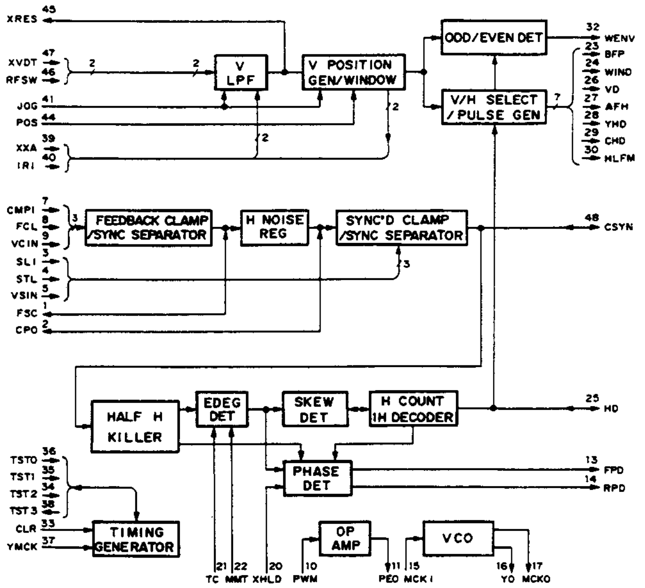
PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	I/O	FCS	13	O	FPD	25	O	HD	37	I	YMCK
2	I/O	CPO	14	O	RPD	26	O	VD	38	O	TST3
3	I	SLI	15	I	MCKI	27	O	AFH	39	I/O	XXA
4	I	STL	16	O	YO	28	O	YHD	40	I/O	IR1
5	I	VSIN	17	O	MCKO	29	O	CHD	41	I	JOG
6	–	GND	18	–	GND	30	O	HLFH	42	–	GND
7	I	CMPI	19	–	VDD	31	–	GND	43	–	VDD
8	I	FCL	20	I	XHLD	32	O	WEVN	44	I	POS
9	I	VCIN	21	O	TC	33	I	CLR	45	O	XRES
10	I	PWM	22	I	MMT	34	I	TST2	46	I	RFSW
11	O	PEO	23	O	BFP	35	I	TST1	47	I	XVDT
12	–	GND	24	O	WIND	36	I	TST0	48	O	CSYN


VCIN
FCL
CMPI
VSIN
STL
SLI
XHLD
TC
MMT
CSYN
FSC
CPO
HD
FPD
RPD
PWM
PEO
MCKI
YO
MCKO
CLR
YMCK
TST0
TST1
TST2
TST3
WENV
BFP
WIND
VD
AFH
YHD
CHD
HLFH
XVDT
RFSW
JOG
POS
XXA
IR1
XRES

INPUT
CLR : DIRECT CLEAR INPUT
CMPI : FEED BACK CLAMP SLICE LEVEL INPUT
FCL : FEED BACK CLAMP SYNC CHIP LEVEL INPUT
JOG : REFERENCE CONTROL INPUT
MCKI : CLOCK (VCO) INVERTER INPUT
MMT : MONO MULTI TEST PIN (H : NORMAL) INPUT
POS : PHASE REFERENCE SELECT
PWM : OP AMP INPUT
RFSW : RF SW PULSE INPUT
SLI : SYNC CLAMP SLICE LEVEL INPUT
STL : SYNC CLAMP SYNC CHIP LEVEL INPUT
TST0 : L : NORMAL/H : TEST MODE INPUT
TST1, 2 : AFC LOCK PHASE COARSE ADJUST INPUTS
VCIN : FEED BACK CLAMP VIDEO INPUT
VSIN : SYNC CLAMP VIDEO INPUT
XHLD : H : AFC ERROR ACTIVE/L : AFC ERROR HOLD INPUT
XVDT : V DETECT COMPOSITE SYNC INPUT
YMCK : MASTER CLOCK INPUT

OUTPUT
AFH : AFC H DRIVE OUTPUT
BFP : BURST FLAG PULSE OUTPUT
CHD : H SYNC OUTPUT FOR BURST DETECT
FPD : AFC SUB LOOP PHASE ERROR OUTPUT
HLFH : $1/2f_H$ (≒ 7.5 kHz) OUTPUT
MCKO : CLOCK (VCO) INVERTER OUTPUT ($910f_H$)
PEO : OP AMP OUTPUT
RPD : AFC MAIN LOOP PHASE ERROR OUTPUT
TST3 : L : NORMAL, H : TEST MODE OUTPUT
VD : VERTICAL SYNC DETECT OUTPUT
WEVN : WRITE EVEN/ODD FIELD DETECT OUTPUT
WIND : WINDOW COMPARATOR OUTPUT FOR V-PLL
XRES : V DETECT LPF OUTPUT
YO : CLOCK (VCO) INVERT OUTPUT
YHD : PEDESTAL CLAMP TIMING OUTPUT

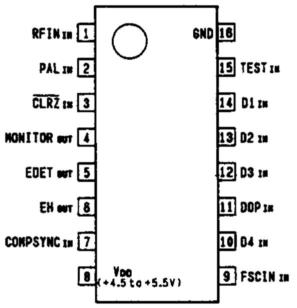
INPUT/OUTPUT
CPO : CLAMP PULSE INPUT/OUTPUT
CSYN : CLAMP SYNC SEPARATE INPUT/OUTPUT
FCS : FEED BACK CLAMP SYNC SEPARATE INPUT/OUTPUT
HD : AFC H DIRECT INPUT/OUTPUT
IR1 : MONITOR PIN FOR TEST INPUT/OUTPUT
TC : AFC LOCK PHASE FINE ADJUST INPUT/OUTPUT
XXA : MONITOR PIN FOR TEST INPUT/OUTPUT

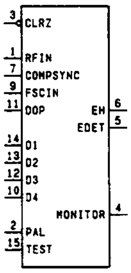

XRES
XVDT
RFSW
JOG
POS
XXA
IR1
V LPF
V POSITION GEN/WINDOW
ODD/EVEN DET
V/H SELECT /PULSE GEN
WENV
BFP
WIND
VD
AFH
YHD
CHD
HLFM
CMPI
FCL
VCIN
SLI
STL
VSIN
FSC
CPO
FEEDBACK CLAMP /SYNC SEPARATOR
H NOISE REG
SYNC'D CLAMP /SYNC SEPARATOR
CSYN
HALF H KILLER
EDEG DET
SKEW DET
H COUNT 1H DECODER
HD
PHASE DET
FPD
RPD
TST0
TST1
TST2
TST3
CLR
YMCK
TIMING GENERATOR
OP AMP
VCO
TC
MMT
XHLD
PWM
PEO
MCKI
YO
MCKO

CXD2107M (SONY) FLAT PACKAGE

C-MOS DEFINITION DETECTOR

- TOP VIEW -

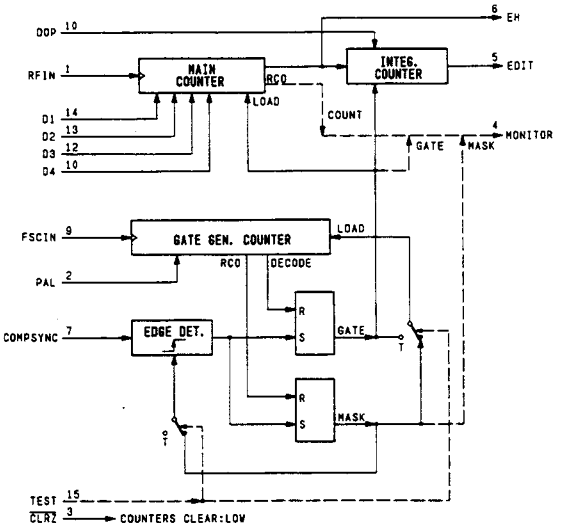

RFIN IN
PAL IN
CLRZ IN
MONITOR OUT
EDET OUT
EH OUT
COMPSYNC IN
VDD (+4.5 to +5.5V)
GND
TEST IN
D1 IN
D2 IN
D3 IN
DOP IN
D4 IN
FSCIN IN


CLRZ
RFIN
COMPSYNC
FSCIN
DOP
D1
D2
D3
D4
PAL
TEST
EH
EDET
MONITOR

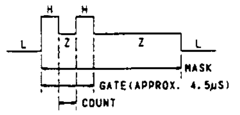
INPUT
CLRZ : CLEAR SIGNAL INPUT FOR INTERNAL COUNTERS
COMPSYNC: COMPOSITE SYNC INPUT
D1–D4 : LOAD DATA INPUTS FOR MAIN COUNTER (D0=HIGH, FIXED DATA)
DOP : DROPOUT COMPENSATION PULSE INPUT
FSCIN : COLOR SUBCARRIER INPUT. NTSC=3.579545MHz, PAL=4.433619MHz
PAL : OPERATION MODE SELECT INPUT. HIGH=PAL, LOW=NTSC
RFIN : PLAYBACK Y RF SIGNAL INPUT
TEST : TEST CONTROL INPUT. NORMAL=LOW

OUTPUT
EDET : E* MODE DETECTION OUTPUT, CONTINUOUS 16H
EH : E* MODE DETECTION OUTPUT, DISTINGUISH IN 1H
MONITOR : MONITOR OUTPUT OF COUNT, GATE, AND MASK PULSES

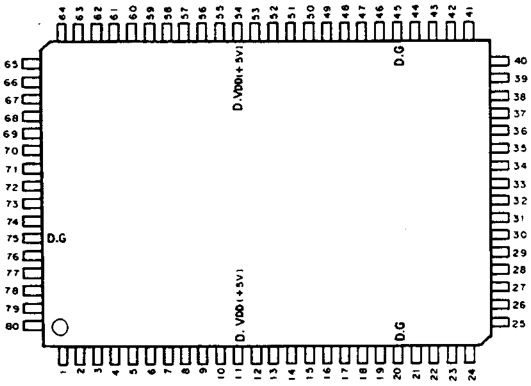
NOTE
E* : EXTENDED DEFINITION


DOP
RFIN
D1
D2
D3
D4
MAIN COUNTER
RCO
LOAD
INTEG. COUNTER
EH
EDIT
COUNT
GATE
MASK
MONITOR
FSCIN
PAL
GATE GEN. COUNTER
LOAD
RCO
DECODE
COMPSYNC
EDGE DET.
R
S
GATE
T
R
S
MASK
T
TEST
CLRZ
COUNTERS CLEAR:LOW

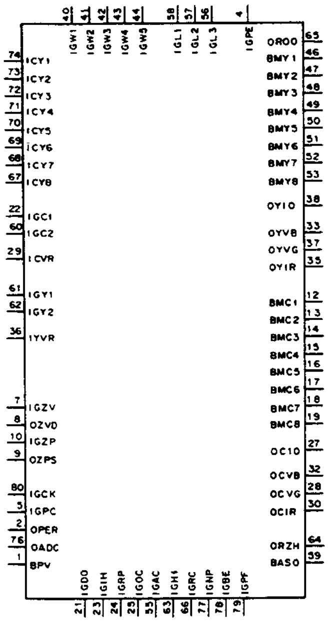
MONITOR OUTPUT


H
H
L
Z
Z
L
MASK
GATE(APPROX. 4.5μS)
COUNT

CXD2105AQ (SONY) FLAT PACKAGE
C-MOS DIGITAL COMB FILTER FOR VTR'S
– TOP VIEW –


D.VDD(+5V)
D.G
D.G
D. VDD(+5V)
D.G

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	BPV	21	I	IGD0	41	I	IGW2	61	I	IGY1
2	O	OPER	22	I	IGC1	42	I	IGW3	62	I	IGY2
3	–	A.VDD P	23	I	IGIH	43	I	IGW4	63	I	IGH1
4	I	IGPE	24	I	IGRP	44	I	IGW5	64	O	ORZH
5	I	IGPC	25	I	IGOC	45	–	D.G	65	O	OR00
6	–	A.G P	26	–	A.VDD C	46	I/O	BMY1	66	I	IGRC
7	I	IGZV	27	O	OCIO	47	I/O	BMY2	67	I	IYC8
8	O	OZVD	28	O	OCVG	48	I/O	BMY3	68	I	IYC7
9	O	OZPS	29	–	ICVR	49	I/O	BMY4	69	I	IYC6
10	I	IGZP	30	O	OCIR	50	I/O	BMY5	70	I	IYC5
11	–	D.VDD	31	–	A.G C	51	I/O	BMY6	71	I	IYC4
12	I/O	BMC1	32	O	OCVB	52	I/O	BMY7	72	I	IYC3
13	I/O	BMC2	33	O	OYVB	53	I/O	BMY8	73	I	IYC2
14	I/O	BMC3	34	–	A.G Y	54	–	D.VDD	74	I	IYC1
15	I/O	BMC4	35	O	OYIR	55	I	IGAC	75	–	D.G
16	I/O	BMC5	36	–	IYVR	56	I	IGL3	76	O	OADC
17	I/O	BMC6	37	O	OYVG	57	I	IGL2	77	I	IGNP
18	I/O	BMC7	38	O	OYIO	58	I	IGL1	78	I	IGBE
19	I/O	BMC8	39	–	A.VDD Y	59	I/O	BASO	79	I	IGPF
20	–	D.G	40	I	IGW1	60	I	IGC2	80	I	IGCK


IGW1
IGW2
IGW3
IGW4
IGW5
IGL1
IGL2
IGL3
IGPE
ICY1
ICY2
ICY3
ICY4
ICY5
ICY6
ICY7
ICY8
IGC1
IGC2
ICVR
IGY1
IGY2
IYVR
IGZV
OZVD
IGZP
OZPS
IGCK
IGPC
OPER
OADC
BPV
OR00
BMY1
BMY2
BMY3
BMY4
BMY5
BMY6
BMY7
BMY8
OYIO
OYVB
OYVG
OYIR
BMC1
BMC2
BMC3
BMC4
BMC5
BMC6
BMC7
BMC8
OCIO
OCVB
OCVG
OCIR
ORZH
BASO
IGDO
IGIH
IGRP
IGOC
IGAC
IGH1
IGRC
IGNP
IGBE
IGPF

INPUT

BPV ; EXT/INT CLOCK SELECT
ICVR ; ESTABLISHES MAXIMUM AMPLITUDE VALUE FOR OCIO (PIN 27)
IGAC ; V CORRELATION CIRCUIT ON/OFF
IGBE ; SINGLE WAVE DETECTION ON/OFF (Y/C SEPARATION MODE)
IGC1 ; V CORRELATION CIRCUIT SELECT
IGC2 ; CHROMA FLAT SECTION HORIZONTAL FILTER SELECT (Y/C SEPARATION MODE)
IGCK ; EXTERNAL CLOCK
IGD0 ; DROPOUT CORRECTION
IGH1 ; FLAT SECTION HORIZONTAL FILTER SELECT (Y/C SEPARATION MODE)
IGIH ; SLEW MODE SET
IGL1 – IGL3 ; LIMITER LEVEL ADJUST FOR Y SIGNAL COMB FILTER
IGNP ; NTSC/PAL FORMAT SELECT
IGOC ; OUTPUT ENABLE
IGPC ; VCO CONTROL
IGPE ; TEST
IGPF ; PLL SUBCARRIER
IGRC ; DELAY LINE LENGTH ADJUST
IGRP ; Y/C SEPARATION AND PLAYBACK MODE SELECT
IGW1 – IGW5 ; Y COMB FILTER DEPTH ADJUST
IGY1, IGY2 ; EDGE SECTION HORIZONTAL FILTER SELECT (Y/C SEPARATION MODE)
IGZP ; 1-BIT DELAY CIRCUIT
IGZV ; VCR HEAD SWITCHING
IYC1 – IYC8 ; VIDEO SIGNAL
IYVR ; ESTABLISHES MAXIMUM AMPLITUDE VALUE FOR OYIO (PIN 38)

OUTPUT

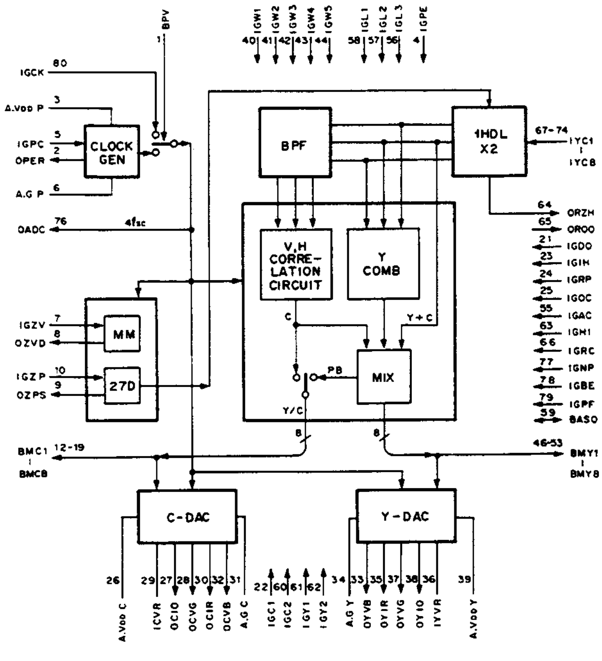
OADC ; CLOCK
OCIO ; CHROMA ANALOG SIGNAL
OCIR ; CONNECT A RESISTOR 16x LARGE THAN THE RESISTOR AT OCIO (PIN 27)
OCVB ; CONNECT TO DIGITAL GND WHICH HAS A CAPACITANCE OF UP TO 0.1 μF
OCVG ; CONNECT TO AN ANALOG POWER SUPPLY WHICH HAS A CAPACITANCE OF UP TO 0.1 μF
OPER ; PLL ERROR
OR00 ; "0" IS DETECTED AT ALL INPUTS
ORZH ; 1-BIT DELAY CIRCUIT
OYIO ; Y ANALOG SIGNAL
OYIR ; CONNECT A RESISTOR 16x LARGE THAN THE RESISTOR AT OYIO (PIN 38)
OYVB ; CONNECT TO DIGITAL GND WHICH HAS A CAPACITANCE OF UP TO 0.1 μF
OYVG ; CONNECT TO AN ANALOG POWER SUPPLY WHICH HAS A CAPACITANCE OF UP TO 0.1 μF
OZPS ; 1-BIT DELAY CIRCUIT
OZVD ; VSYNC PERIOD MASK

INPUT/OUTPUT

BASO ; EDGE DETECTION LEVEL SELECT (Y/C SEPARATION MODE)
BMC1 – BMC8 ; CHROMA DIGITAL SIGNAL
BMY1 – BMY8 ; Y DIGITAL SIGNAL

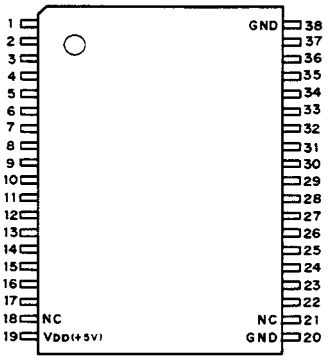
OTHER

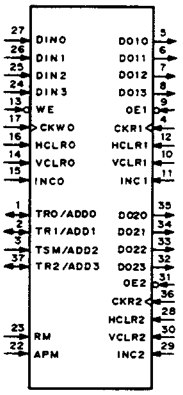
A.G C ; ANALOG GND FOR CHROMA D/A
A.G P ; ANALOG GND FOR VCO
A.G Y ; ANALOG GND FOR Y D/A
A.VDD C ; ANALOG POWER SUPPLY FOR CHROMA D/A
A.VDD P ; ANALOG POWER SUPPLY FOR VCO
A.VDD Y ; ANALOG POWER SUPPLY FOR Y D/A
D.G ; DIGITAL GND
D.VDD ; POWER SUPPLY FOR DIGITAL


BPV
IGW1
IGW2
IGW3
IGW4
IGW5
IGL1
IGL2
IGL3
IGPE
IGCK
A.VDD P
IGPC
OPER
A.G P
OADC
4fsc
CLOCK GEN
BPF
1HDL X2
IYC1 ~ IYC8
V,H CORRE-LATION CIRCUIT
Y COMB
C
Y+C
PB
MIX
Y/C
MM
27D
IGZV
OZVD
IGZP
OZPS
BMC1 ~ BMC8
BMY1 ~ BMY8
ORZH
OR00
IGDO
IGIH
IGRP
IGOC
IGAC
IGH1
IGRC
IGNP
IGBE
IGPF
BASO
C-DAC
Y-DAC
A.VDD C
ICVR
OCIO
OCVG
OCIR
OCVB
A.G C
IGC1
IGC2
IGY1
IGY2
A.G Y
OYVB
OYIR
OYVG
OYIO
IYVR
A.VDD Y

CXK1206AM (SONY) FLAT PACKAGE
CXK1206M (SONY) FLAT PACKAGE

C-MOS VIDEO FIELD MEMORY (960-COLUMNx306-ROWx4-BIT)
– TOP VIEW –


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18 NC
19 VDD(+5V)
GND 38
37
36
35
34
33
32
31
30
29
28
27
26
25
24
23
22
NC 21
GND 20

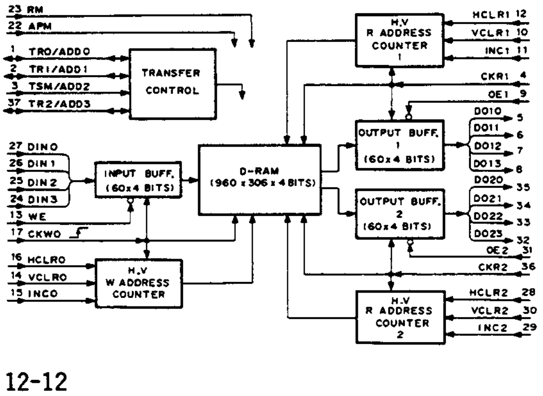

27 DIN0
26 DIN1
25 DIN2
24 DIN3
13 WE
17 CKW0
16 HCLR0
14 VCLR0
15 INC0
1 TR0/ADD0
2 TR1/ADD1
3 TSM/ADD2
37 TR2/ADD3
23 RM
22 APM
DO10 5
DO11 6
DO12 7
DO13 8
OE1 9
CKR1 4
HCLR1 12
VCLR1 10
INC1 11
DO20 35
DO21 34
DO22 33
DO23 32
OE2 31
CKR2 36
HCLR2 28
VCLR2 30
INC2 29

PIN	SIGNAL	DESCRIPTION
1	TR0/ADD0	W PORT 0 TRANSFER SYNC I/O, ADDRESS 0 INPUT
2	TR1/ADD1	R PORT 1 TRANSFER SYNC I/O, ADDRESS 1 INPUT
3	TSM/ADD2	TRANSFER SYNCHRONOUS MODE, ADDRESS 2 INPUT
4	CKR1	R PORT 1 SHIFT SIGNAL INPUT
5	DO10	R PORT 1 DATA 0 OUTPUT
6	DO11	R PORT 1 DATA 1 OUTPUT
7	DO12	R PORT 1 DATA 2 OUTPUT
8	DO13	R PORT 1 DATA 3 OUTPUT
9	OE1	R PORT 1 OUTPUT ENABLE INPUT
10	VCLR1	R PORT 1 VERTICAL CLEAR INPUT
11	INC1	R PORT 1 LINE INCREMENT INPUT
12	HCLR1	R PORT 1 HORIZONTAL CLEAR INPUT
13	WE	W PORT 0 WRITE ENABLE INPUT
14	VCLR0	W PORT 0 VERTICAL CLEAR INPUT
15	INC0	W PORT 0 LINE INCREMENT INPUT
16	HCLR0	W PORT 0 HORIZONTAL CLEAR INPUT
17	CKW0	W PORT 0 SHIFT SIGNAL INPUT
18	NC	(no connection)
19	VDD	+5V INPUT
20	GND	GND
21	NC	(no connection)
22	APM	ADDRESS PRESET MODE INPUT
23	RM	RECURSIVE MODE ENABLE INPUT
24	DIN3	W PORT 0 DATA 3 INPUT
25	DIN2	W PORT 0 DATA 2 INPUT
26	DIN1	W PORT 0 DATA 1 INPUT
27	DIN0	W PORT 0 DATA 0 INPUT
28	HCLR2	R PORT 2 HORIZONTAL CLEAR INPUT
29	INC2	R PORT 2 LINE INCREMENT INPUT
30	VCLR2	R PORT 2 VERTICAL CLEAR INPUT
31	OE2	R PORT 2 OUTPUT ENABLE INPUT
32	DO23	R PORT 2 DATA 3 OUTPUT
33	DO22	R PORT 2 DATA 2 OUTPUT
34	DO21	R PORT 2 DATA 1 OUTPUT
35	DO20	R PORT 2 DATA 0 OUTPUT
36	CKR2	R PORT 2 SHIFT SIGNAL INPUT
37	TR2/ADD3	R PORT 2 TRANSFER SYNC I/O, ADDRESS 3 INPUT
38	GND	GND

MODE SELECTION

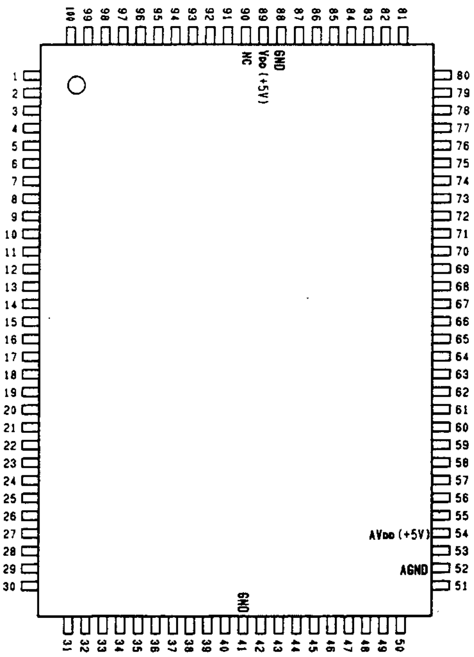
CONTROL INPUTS		TS,TR/ADD			MODE
RM	APM	TSM	TR 0-2	ADD 0-3	
0	0	0	OUT-PUT	-	NON RECURSIVE MODE, TRANSFER SYNCHRONOUS MODE OUTPUT
0	0	1	IN-PUT	-	NON RECURSIVE MODE, TRANSFER SYNCHRONOUS MODE INPUT
0	1	-	-	IN-PUT	NON RECURSIVE MODE, ADDRESS PRESET MODE
1	0	0	OUT-PUT	-	RECURSIVE MODE, TRANSFER SYNCHRONOUS MODE OUTPUT
1	0	1	IN-PUT	-	RECURSIVE MODE, TRANSFER SYNCHRONOUS MODE INPUT

0:LOW LEVEL   1:HIGH LEVEL


23 RM
22 APM
1 TR0/ADD0
2 TR1/ADD1
3 TSM/ADD2
37 TR2/ADD3
TRANSFER CONTROL
27 DIN0
26 DIN1
25 DIN2
24 DIN3
13 WE
17 CKW0
INPUT BUFF. (60x4 BITS)
D-RAM (960 x 306 x 4 BITS)
16 HCLR0
14 VCLR0
15 INC0
H.V W ADDRESS COUNTER
H.V R ADDRESS COUNTER 1
HCLR1 12
VCLR1 10
INC1 11
CKR1 4
OE1 9
OUTPUT BUFF. 1 (60x4 BITS)
DO10 5
DO11 6
DO12 7
DO13 8
OUTPUT BUFF. 2 (60x4 BITS)
DO20 35
DO21 34
DO22 33
DO23 32
OE2 31
CKR2 36
H.V R ADDRESS COUNTER 2
HCLR2 28
VCLR2 30
INC2 29

CXP80624 (SONY) FLAT PACKAGE
CXP80P624 (SONY) FLAT PACKAGE

C-MOS 8-BIT 1-CHIP MICROCOMPUTER
– TOP VIEW –


100
99
98
97
96
95
94
93
92
91
90
89
88
87
86
85
84
83
82
81
GND
VDD (+5V)
NC
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
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24
25
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80
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72
71
70
69
68
67
66
65
64
63
62
61
60
59
58
57
56
55
54
53
52
51
AVDD (+5V)
AGND
GND
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50

INPUT

AN0 – AN11	: A-D CONVERTOR'S ANALOG INPUTS
AVREF	: A-D CONVERTOR'S REFERENCE VOLTAGE INPUT
CFG	: CAPSTAN FG INPUT
CS0	: SERIAL INTERFACE CHANNLE 0 SELECT INPUT
DPG,DFG	: DURM PG AND FG INPUTS
EC	: EVENT CONTROL INPUT FOR TIMER/COUNTER
EXI0,EXI1	: FRC CAPTURE UNIT'S EXTERNAL INPUTS
EXTAL	: CRYSTAL CONNECTION OR EXTERNAL CLOCK INPUT FOR SYSTEM CLOCK GENERATOR
INT0 – INT2	: INTERRUPT REQUEST INPUTS (FALLING EDGE ACTIVE)
PBCTL	: PLAYBACK CTL PULSE INPUT
PCK	: PRESCALER'S EXTERNAL CLOCK INPUT
PE0,PE1	: INPUTS OF PORT E (PE2 – PE7 ; OUTPUTS)
PF0 – PF3	: INPUTS OF PORT F (PF4 – PF7 ; OUTPUTS)
PG0 – PG7	: INPUTS OF PORT G
PI0	: INPUT OF PORT I (PI1 – PI7 ; INPUTS/OUTPUTS)
PK0	: INPUT OF PORT K
SI0,SI1	: SERIAL DATA INPUTS (CHANNLE 0 AND CHANNLE 1)
SYNC0,SYNC1	: COMPOSITE SYNC SIGNAL INPUTS

OUTPUT

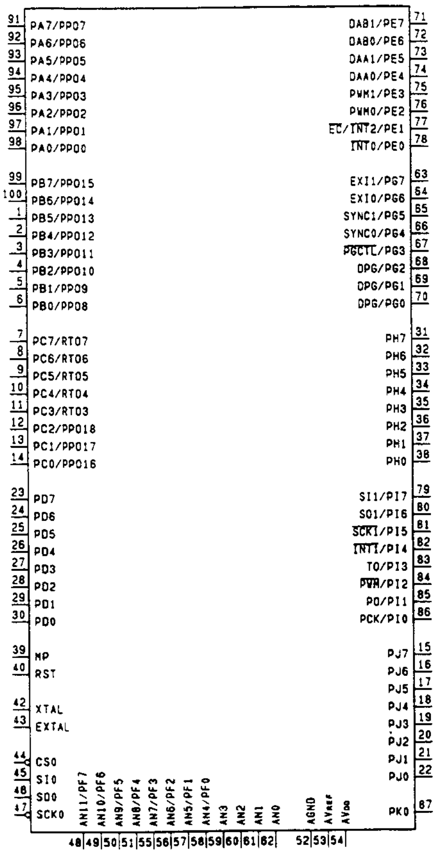
DAA0,DAB0	: DA GATE PULSE OUTPUTS (12 BITS PWM CHANNLE 0)
DAA1,DAB1	: DA GATE PULSE OUTPUTS (12 BITS PWM CHANNLE 1)
MP	: MICROPROCESSOR MODE INPUT
PA0 – PA7	: OUTPUTS OF PORT A
PB0 – PB7	: OUTPUTS OF PORT B
PE2 – PE7	: OUTPUTS OF PORT E (PE0, PE1 ; INPUTS)
PF4 – PF7	: OUTPUTS OF PORT F (PF0 – PF3 ; INPUTS)
PH0 – PH7	: OUTPUTS OF PORT H (N-CH OPEN DRAIN OUTPUTS)
PPO0 – PPO18	: PROGRAMMABLE PATTERN GENERATOR OUTPUS
PO	: PRESCALER OUTPUT
PWM	: PULSE WIDTH MODULATION OUTPUT
PWM0,PWM1	: 12 BITS PULSE WIDTH MODULATION OUTPUTS (CHANNLE 0 AND CHANNLE 1)
RTO3 – RTO7	: REALTIME PULSE GENERATOR OUTPUTS
SO0,SO1	: SERIAL DATA OUTPUTS (CHANNLE 0 AND CHANNLE 1)
TO	: TIMER/COUNTER OUTPUT (DUTY 50%)
XTAL	: CRYSTAL CONNECTION

INPUT/OUTPUT

PC0 – PC7	: INPUTS/OUTPUTS OF PROT C (BIT PROGRAMMABLE)
PD0 – PD7	: INPUTS/OUTPUTS OF PROT D (4 BITS PROGRAMMABLE)
PI1 – PI7	: INPUTS/OUTPUTS OF PROT I (BIT PROGRAMMABLE, PI0 ; INPUT)
PJ0 – PJ7	: INPUTS/OUTPUTS OF PROT J (BIT PROGRAMMABLE)
RST	: SYSTEM RESET INPUT AND POWER ON RESET OUTPUT
SCK0,SCK1	: SERIAL CLOCK INPUTS/OUTPUTS (CHANNLE 0 AND CHANNLE 1)

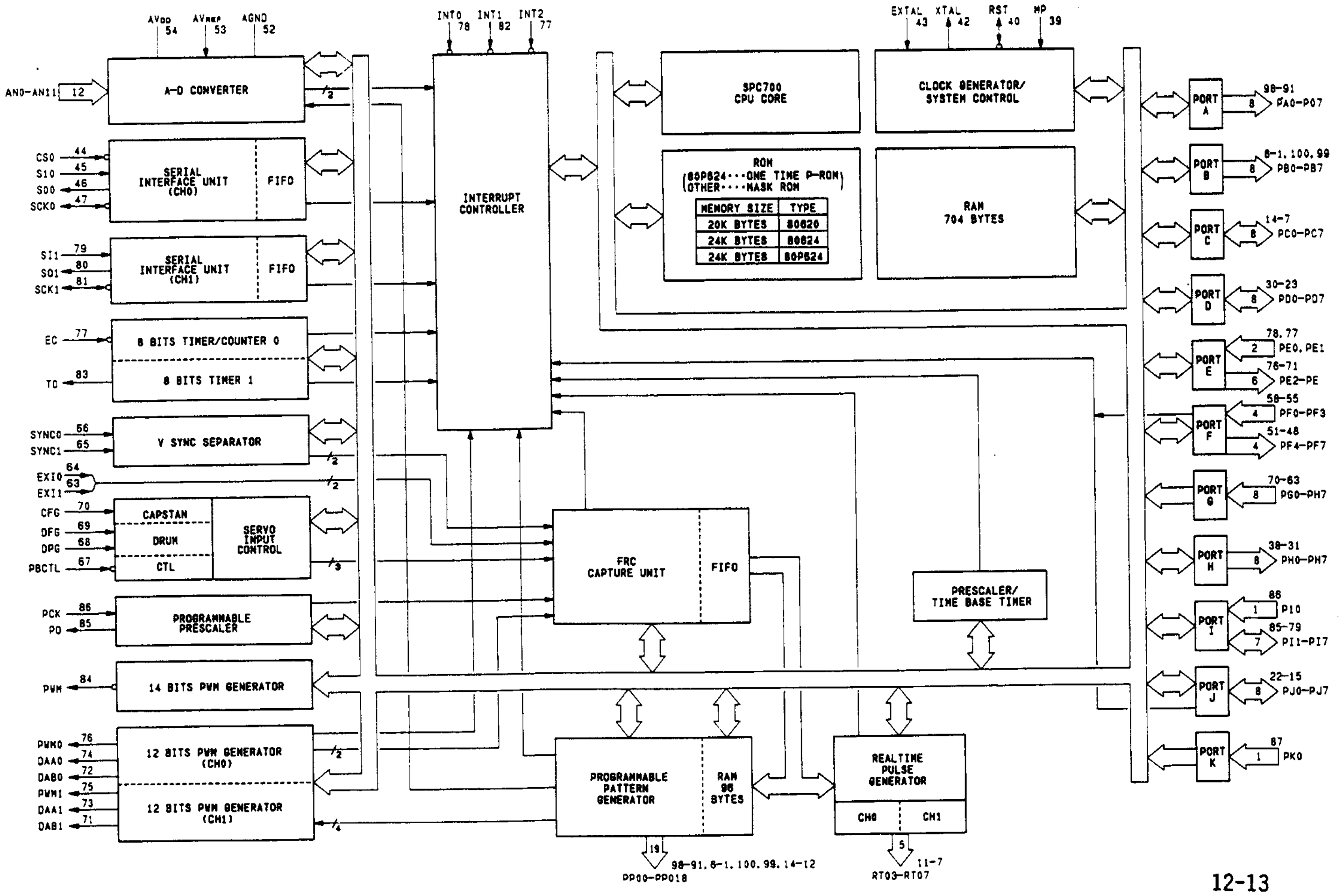
OTHER

AGND	: A-D CONVERTOR'S GROUND
AVDD (+5V)	: A-D CONVERTOR'S VDD


91 PA7/PP07
92 PA6/PP06
93 PA5/PP05
94 PA4/PP04
95 PA3/PP03
96 PA2/PP02
97 PA1/PP01
98 PA0/PP00
99 PB7/PP015
100 PB6/PP014
1 PB5/PP013
2 PB4/PP012
3 PB3/PP011
4 PB2/PP010
5 PB1/PP09
6 PB0/PP08
7 PC7/RT07
8 PC6/RT06
9 PC5/RT05
10 PC4/RT04
11 PC3/RT03
12 PC2/PP018
13 PC1/PP017
14 PC0/PP016
23 PD7
24 PD6
25 PD5
26 PD4
27 PD3
28 PD2
29 PD1
30 PD0
39 MP
40 RST
42 XTAL
43 EXTAL
44 CS0
45 SI0
46 SO0
47 SCK0
DAB1/PE7 71
DAB0/PE6 72
DAA1/PE5 73
DAA0/PE4 74
PWM1/PE3 75
PWM0/PE2 76
EC/INT2/PE1 77
INT0/PE0 78
EXI1/PG7 63
EXI0/PG6 64
SYNC1/PG5 65
SYNC0/PG4 66
PBCTL/PG3 67
DPG/PG2 68
DPG/PG1 69
DPG/PG0 70
PH7 31
PH6 32
PH5 33
PH4 34
PH3 35
PH2 36
PH1 37
PH0 38
SI1/PI7 79
SO1/PI6 80
SCK1/PI5 81
INT1/PI4 82
TO/PI3 83
PWM/PI2 84
PO/PI1 85
PCK/PI0 86
PJ7 15
PJ6 16
PJ5 17
PJ4 18
PJ3 19
PJ2 20
PJ1 21
PJ0 22
PK0 87
AN11/PF7 48
AN10/PF6 49
AN9/PF5 50
AN8/PF4 51
AN7/PF3 55
AN6/PF2 56
AN5/PF1 57
AN4/PF0 58
AN3 59
AN2 60
AN1 61
AN0 62
AGND 52
AVREF 53
AVDD 54

($V_{DD} = AV_{DD} = +5V$)

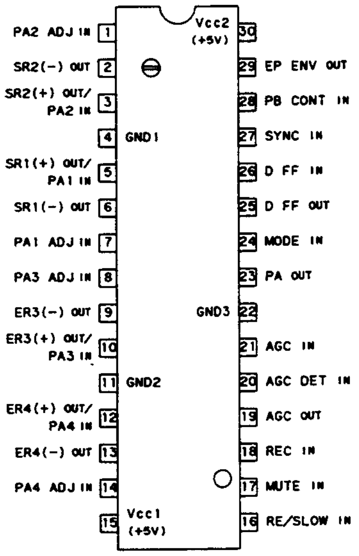
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	O	PB5/PPO13	26	I/O	PD4	51	I/O	PF4/AN8	76	O	PE2/PWM0
2	O	PB4/PPO12	27	I/O	PD3	52	–	AGND	77	I	PE1/EC/INT2
3	O	PB3/PPO11	28	I/O	PD2	53	I	AVREF	78	I	PE0/INT0
4	O	PB2/PPO10	29	I/O	PD1	54	–	AVDD	79	I/O	PI7/SI1
5	O	PB1/PPO9	30	I/O	PD0	55	I	PF3/AN7	80	I/O	PI6/SO1
6	O	PB0/PPO8	31	I/O	PH7	56	I	PF2/AN6	81	I/O	PI5/SCK1
7	I/O	PC7/RTO7	32	O	PH6	57	I	PF1/AN5	82	I/O	PI4/INT1
8	I/O	PC6/RTO6	33	O	PH5	58	I	PF0/AN4	83	I/O	PI3/TO
9	I/O	PC5/RTO5	34	O	PH4	59	I	AN3	84	I/O	PI2/PWM
10	I/O	PC4/RTO4	35	O	PH3	60	I	AN2	85	I/O	PI1/PO
11	I/O	PC3/RTO3	36	O	PH2	61	I	AN1	86	I	PI0/PCK
12	I/O	PC2/PPO18	37	O	PH1	62	I	AN0	87	I	PK0
13	I/O	PC1/PPO17	38	O	PH0	63	I	PG7/EXI1	88	–	GND
14	I/O	PC0/PPO16	39	O	MP	64	I	PG6/EXI0	89	–	VDD
15	I/O	PJ7	40	I/O	RST	65	I	PG5/SYNC1	90	–	NC
16	I/O	PJ6	41	–	GND	66	I	PG4/SYNC0	91	O	PA7/PPO7
17	I/O	PJ5	42	O	XTAL	67	I	PG3/PBCTL	92	O	PA6/PPO6
18	I/O	PJ4	43	I	EXTAL	68	I	PG2/DPG	93	O	PA5/PPO5
19	I/O	PJ3	44	I	CS0	69	I	PG1/DFG	94	O	PA4/PPO4
20	I/O	PJ2	45	I	SI0	70	I	PG0/CFG	95	O	PA3/PPO3
21	I/O	PJ1	46	O	SO0	71	O	PE7/DAB1	96	O	PA2/PPO2
22	I/O	PJ0	47	I/O	SCK0	72	O	PE6/DAB0	97	O	PA1/PPO1
23	I/O	PD7	48	I/O	PF7/AN11	73	O	PE5/DAA1	98	O	PA0/PPO0
24	I/O	PD6	49	I/O	PF6/AN10	74	O	PE4/DAA0	99	O	PB7/PPO15
25	I/O	PD5	50	I/O	PF5/AN9	75	O	PE3/PWM1	100	O	PB6/PPO14

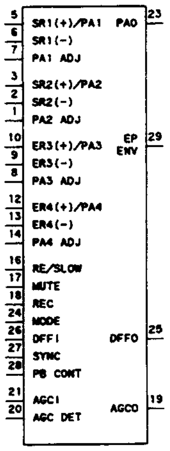

AVDD 54
AVREF 53
AGND 52
AN0–AN11 12
A–D CONVERTER
CS0 44
SI0 45
SO0 46
SCK0 47
SERIAL INTERFACE UNIT (CH0)
FIFO
SI1 79
SO1 80
SCK1 81
SERIAL INTERFACE UNIT (CH1)
FIFO
EC 77
8 BITS TIMER/COUNTER 0
TO 83
8 BITS TIMER 1
SYNC0 66
SYNC1 65
V SYNC SEPARATOR
EXI0 64
EXI1 63
CFG 70
DFG 69
DPG 68
PBCTL 67
CAPSTAN
DRUM
CTL
SERVO INPUT CONTROL
PCK 86
PO 85
PROGRAMMABLE PRESCALER
PWM 84
14 BITS PWM GENERATOR
PWM0 76
DAA0 74
DAB0 72
PWM1 75
DAA1 73
DAB1 71
12 BITS PWM GENERATOR (CH0)
12 BITS PWM GENERATOR (CH1)
INT0 78
INT1 82
INT2 77
INTERRUPT CONTROLLER
EXTAL 43
XTAL 42
RST 40
MP 39
SPC700 CPU CORE
CLOCK GENERATOR/ SYSTEM CONTROL
ROM
(80P824···ONE TIME P-ROM
OTHER····MASK ROM)
MEMORY SIZE | TYPE
20K BYTES | 80820
24K BYTES | 80824
24K BYTES | 80P824
RAM 704 BYTES
FRC CAPTURE UNIT
FIFO
PRESCALER/ TIME BASE TIMER
PROGRAMMABLE PATTERN GENERATOR
RAM 96 BYTES
REALTIME PULSE GENERATOR
CH0
CH1
19
98–91, 6–1, 100, 99, 14–12
PP00–PP018
5
11–7
RT03–RT07
PORT A 8 98–91 PA0–PO7
PORT B 8 6–1, 100, 99 PB0–PB7
PORT C 8 14–7 PC0–PC7
PORT D 8 30–23 PD0–PD7
PORT E 2 78, 77 PE0, PE1
6 76–71 PE2–PE
PORT F 4 58–55 PF0–PF3
4 51–48 PF4–PF7
PORT G 8 70–63 PG0–PH7
PORT H 8 38–31 PH0–PH7
PORT I 1 86 PI0
7 85–79 PI1–PI7
PORT J 8 22–15 PJ0–PJ7
PORT K 1 87 PK0
2
2
2
3
2
4

HA118019NT (HITACHI)

VTR PRE REC AMP

- TOP VIEW -


PA2 ADJ IN 1
SR2(-) OUT 2
SR2(+) OUT/ PA2 IN 3
4 GND1
SR1(+) OUT/ PA1 IN 5
SR1(-) OUT 6
PA1 ADJ IN 7
PA3 ADJ IN 8
ER3(-) OUT 9
ER3(+) OUT/ PA3 IN 10
11 GND2
ER4(+) OUT/ PA4 IN 12
ER4(-) OUT 13
PA4 ADJ IN 14
15 Vcc1 (+5V)
Vcc2 (+5V) 30
29 EP ENV OUT
28 PB CONT IN
27 SYNC IN
26 D FF IN
25 D FF OUT
24 MODE IN
23 PA OUT
GND3 22
21 AGC IN
20 AGC DET IN
19 AGC OUT
18 REC IN
17 MUTE IN
16 RE/SLOW IN


5 SR1(+)/PA1
6 SR1(-)
7 PA1 ADJ
3 SR2(+)/PA2
2 SR2(-)
1 PA2 ADJ
10 ER3(+)/PA3
9 ER3(-)
8 PA3 ADJ
12 ER4(+)/PA4
13 ER4(-)
14 PA4 ADJ
16 RE/SLOW
17 MUTE
18 REC
24 MODE
26 DFFI
27 SYNC
28 PB CONT
21 AGCI
20 AGC DET
PAO 23
EP ENV 29
DFFO 25
AGCO 19

INPUT
AGCI ;AGC
AGC DET ;AGC DETECT
DFFI ;DRUM FF
MODE ;MODE CONTROL (L;SP/H;EP)
MUTE ;REC MUTE CONTROL
PA1-PA4 ;PRE AMP CH1-CH4
PA1-PA4 ADJ ;PRE AMP CH1-CH4 ADJUST
PB CONT ;PB CONTROL (MANUAL/AUTO/STILL)
REC ;REC
RE/SLOW ;REC EQ/SLOW CONTROL
SYNC ;SYNC SEPARATE

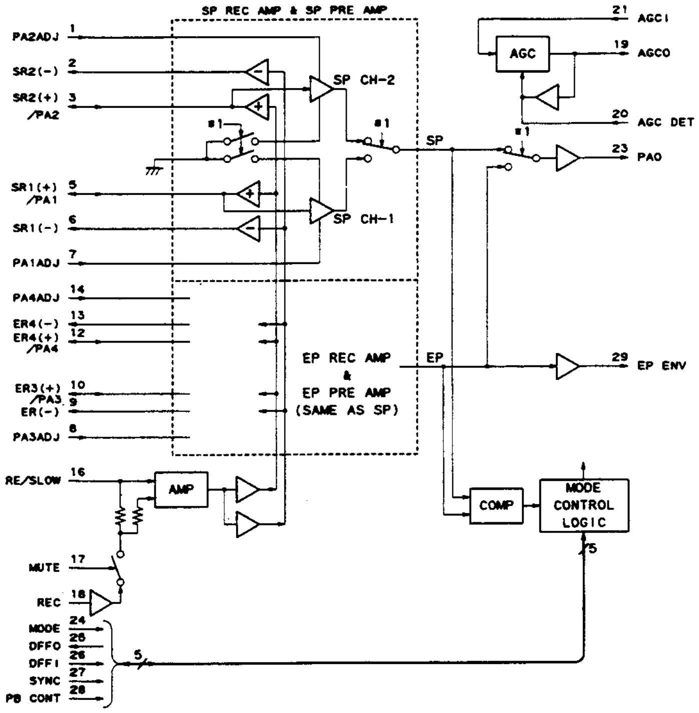
OUTPUT
AGCO ;AGC OUTPUT (PB/REC SELECT)
DFFO ;DRUM FF
EP ENV ;EP ENVELOPE
ER3(+).ER4(+) ;EP REC CH3/CH4(+)
ER3(-).ER4(-) ;EP REC CH3/CH4(-)
PAO ;PRE AMP
SR1(+).SR2(+) ;SP REC CH1/CH2(+)
SR1(-).SR2(-) ;SP REC CH1/CH2(-)

MODE CONTROL

SYMBOL / MODE	DFF1	MODE	PB CONT	RE/ SLOW	DFFO	PAO
SP PB	0	0	1	OPEN	0	CH1
	1	0	1	OPEN	1	CH2
EP PB	0	1	1	OPEN	1	CH4
	1	1	1	OPEN	0	CH3
AUTO	0	–	MIDDLE	OPEN		
	1	–	MIDDLE	OPEN		
SP STILL	0	0	0	OPEN	1	CH4
	1	0	0	OPEN	1	CH2
EP STILL	0	1	0	OPEN	0	CH1
	1	1	0	OPEN	0	CH3
SP SLOW	0	0	0	0	0	CH1
	1	0	0	0	1	CH2
EP SLOW	0	1	0	0	1	CH4
	1	1	0	0	0	CH3

0	CH1
1	CH4
1	CH2
0	CH3

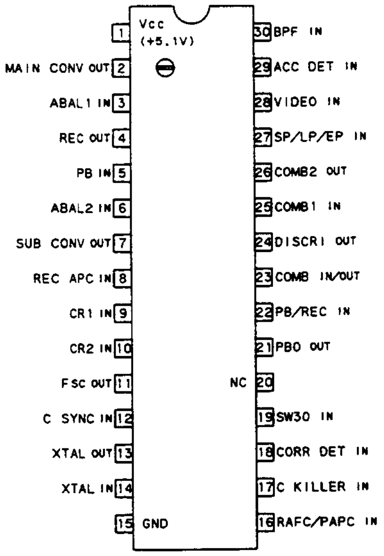
1;HIGH LEVEL
0;LOW LEVEL

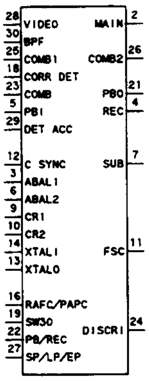

SP REC AMP & SP PRE AMP
PA2ADJ 1
SR2(-) 2
SR2(+) /PA2 3
SR1(+) /PA1 5
SR1(-) 6
PA1ADJ 7
SP CH-2
SP CH-1
*1
SP
PA4ADJ 14
ER4(-) 13
ER4(+) /PA4 12
ER3(+) /PA3 10
ER(-) 9
PA3ADJ 8
EP REC AMP & EP PRE AMP (SAME AS SP)
EP
RE/SLOW 16
AMP
MUTE 17
REC 18
MODE 24
DFFO 25
DFFI 26
SYNC 27
PB CONT 28
5
AGC
21 AGCI
19 AGCO
20 AGC DET
23 PAO
29 EP ENV
COMP
MODE CONTROL LOGIC

HA118027NT (HITACHI)

CHROMA SIGNAL PROCESSOR FOR VHS

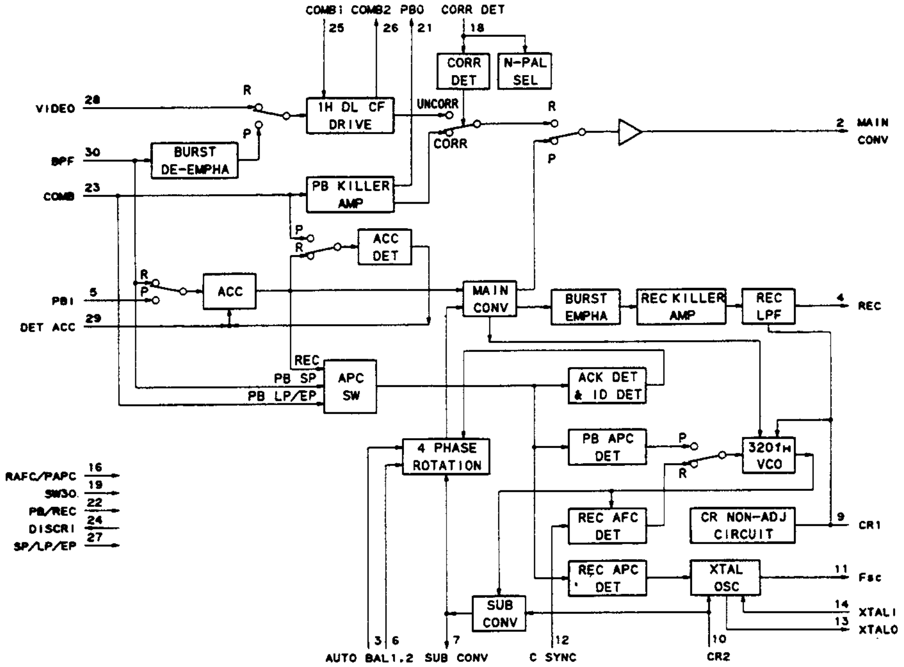
- TOP VIEW -


Vcc (+5.1V)
1
MAIN CONV OUT 2
ABAL1 IN 3
REC OUT 4
PB IN 5
ABAL2 IN 6
SUB CONV OUT 7
REC APC IN 8
CR1 IN 9
CR2 IN 10
Fsc OUT 11
C SYNC IN 12
XTAL OUT 13
XTAL IN 14
15 GND
30 BPF IN
29 ACC DET IN
28 VIDEO IN
27 SP/LP/EP IN
26 COMB2 OUT
25 COMB1 IN
24 DISCRI OUT
23 COMB IN/OUT
22 PB/REC IN
21 PBO OUT
NC 20
19 SW30 IN
18 CORR DET IN
17 C KILLER IN
16 RAFC/PAPC IN


28 VIDEO
30 BPF
25 COMB1
18 CORR DET
23 COMB
5 PB1
29 DET ACC
12 C SYNC
3 ABAL1
6 ABAL2
9 CR1
10 CR2
14 XTAL1
13 XTALO
16 RAFC/PAPC
19 SW30
22 PB/REC
27 SP/LP/EP
MAIN 2
COMB2 26
PBO 21
REC 4
SUB 7
FSC 11
DISCRI 24

INPUT
ABAL1 ;DE-COUPLING CAPACITOR PIN for AUTO BALANCE
ABAL2 ;AUTO BALANCE DETECT
ACC DET ;ACC DETECT
BPF ;REC ACC/PB BURST DE-EMPHASIS
CR1 ;CAPACITOR AND RESISTOR NOT-ADJUST DETECT
CR2 ;CRYSTAL OSC
(VARIABLE CAPACITANCE DIORE for 4 PHASE GENERATOR BLOCK)
C KILLER ;COLOR KILLER DETECT
COMB ;PB COLOR KILLER AMP
COMB1 ;COMB DRIVE
CORR DET ;UNCORRELATED SIGNAL/MANUAL UNCORRELATED MODE SELECT /N·PAL MODE SELECT
CSYNC ;COMPOSITE SYNC
PB1 ;PB ACC
PB/REC ;H;PB/L;REC SELECT
RAFC/PAPC ;REC AFC/PB APC DETECT
REC APC ;REC APC DETECT
SP/LP/EP ;SP/LP/EP SELECT CONTROL (SP:0-0.8V/LP:1.2-3.3V/EP:3.8-5.1V)
SUB CONV ;421MHz TANK CIRCUIT
SW30 ;SWITCHING PULSE (L;CH-2/H;CH-1)
VIDEO ;REC VIDEO
XTAL ;CRYSTAL OSC

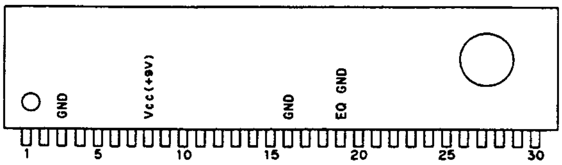
OUTPUT
COMB ;REC COLOR COMB
COMB2 ;PB BURST DE-EMPHASIS
DISCRI ;PB DISCRIMINATE
Fsc ;Fsc
MAIN ;REC COLOR COMB/PB MAIN CONVERTER
PBO ;PB COLOR KILLER AMP/REC COMB
REC ;REC LPF COLOR SIGNAL OUT/PB ID STOP CONTROL
XTAL ;CRYSTAL OSC


COMB1 COMB2 PBO CORR DET
25
26
21
18
CORR DET
N-PAL SEL
VIDEO 28
R
P
1H DL CF DRIVE
UNCORR
CORR
R
P
2 MAIN CONV
BPF 30
BURST DE-EMPHA
COMB 23
PB KILLER AMP
P
R
ACC DET
R
P
PB1 5
ACC
DET ACC 29
MAIN CONV
BURST EMPHA
REC KILLER AMP
REC LPF
4 REC
REC
PB SP
PB LP/EP
APC SW
ACK DET & ID DET
4 PHASE ROTATION
PB APC DET
P
R
3201H VCO
REC AFC DET
CR NON-ADJ CIRCUIT
9 CR1
REC APC DET
XTAL OSC
11 Fsc
SUB CONV
14 XTALI
13 XTALO
RAFC/PAPC 16
SW30 19
PB/REC 22
DISCRI 24
SP/LP/EP 27
3 6 AUTO BAL1.2
7 SUB CONV
12 C SYNC
10 CR2

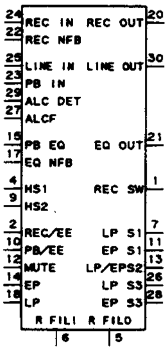
LA7297 (SANYO)

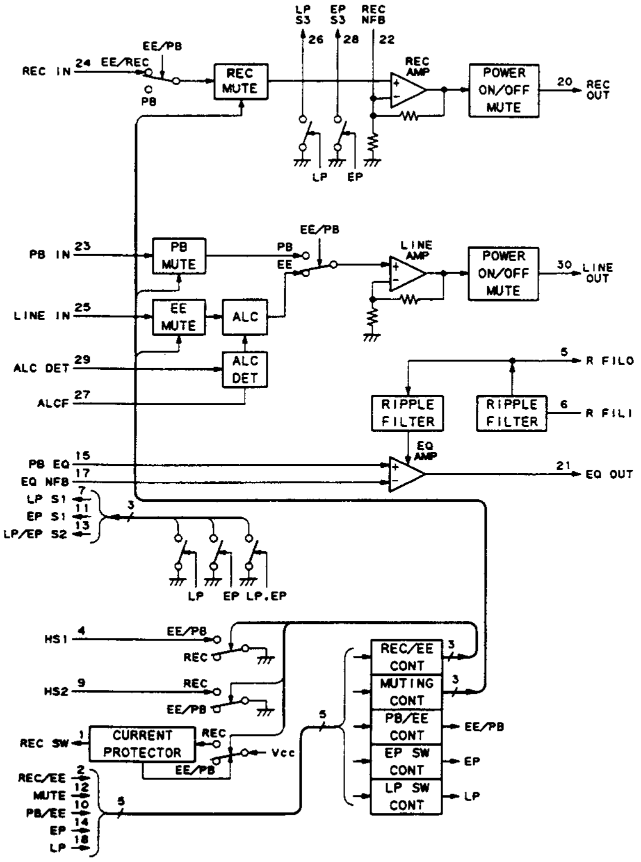
AUDIO SIGNAL REC/PB PROCESSOR

- SIDE VIEW -


GND
Vcc(+9V)
GND
EQ GND
1
5
10
15
20
25
30

PIN NO	I/O	SYMBOL	PIN NO	I/O	SYMBOL
1	O	REC SW	16	—	GND
2	I	REC/EE	17	I	EQ NFB
3	—	GND	18	I	LP
4	I	HS1	19	—	EQ GND
5	O	R FILO	20	O	REC OUT
6	I	R FILI	21	O	EQ OUT
7	O	LP S1	22	I	REC NFB
8	—	Vcc	23	I	PB IN
9	I	HS2	24	I	REC IN
10	I	PB/EE	25	I	LINE IN
11	O	EP S1	26	O	LP S3
12	I	MUTE	27	—	ALCF
13	O	LP/EP S2	28	O	EP S3
14	I	EP	29	I	ALC DET
15	I	PB EQ	30	O	LINE OUT


24 REC IN
22 REC NFB
25 LINE IN
23 PB IN
29 ALC DET
27 ALCF
15 PB EQ
17 EQ NFB
4 HS1
9 HS2
2 REC/EE
10 PB/EE
12 MUTE
14 EP
18 LP
REC OUT 20
LINE OUT 30
EQ OUT 21
REC SW 1
LP S1 7
EP S1 11
LP/EPS2 13
LP S3 26
EP S3 28
R FILI 6
R FILO 5


LP S3 26
EP S3 28
REC NFB 22
REC IN 24
EE/REC
EE/PB
PB
REC MUTE
REC AMP
POWER ON/OFF MUTE
20 REC OUT
LP
EP
PB IN 23
PB MUTE
EE/PB
PB
EE
LINE AMP
POWER ON/OFF MUTE
30 LINE OUT
LINE IN 25
EE MUTE
ALC
ALC DET 29
ALC DET
ALCF 27
5 R FILO
RIPPLE FILTER
RIPPLE FILTER
6 R FILI
EQ AMP
PB EQ 15
EQ NFB 17
21 EQ OUT
LP S1 7
EP S1 11
LP/EP S2 13
3
LP
EP
LP.EP
HS1 4
EE/PB
REC
HS2 9
REC
EE/PB
REC SW 1
CURRENT PROTECTOR
REC
EE/PB
Vcc
REC/EE 2
MUTE 12
PB/EE 10
EP 14
LP 18
5
REC/EE CONT
MUTING CONT
PB/EE CONT
EP SW CONT
LP SW CONT
3
3
5
EE/PB
EP
LP

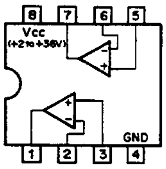
INPUT
ALC DET ;AUTO LIMITER CONTROL DETECTOR
ALCF ;AUTO LIMITER CONTROL FILTER
EP ;EP SWITCH CONTROL
EQ NFB ;PB EQUALIZED NEGATIVE FEEDBACK
HS1.2 ;HEAD SWITCH 1.2
LP ;LP SWITCH CONTROL
LINE IN ;AUDIO LINE
MUTE ;MUTE SWITCH CONTROL
PB/EE ;PB/EE SWITCH CONTROL
PB EQ ;PB EQUALIZED
PB IN ;AUDIO PB LEVEL
REC/EE ;REC/EE SWITCH CONTROL
REC IN ;AUDIO REC LEVEL
REC NFB ;AUDIO REC NEGATIVE FEEDBACK
R FILI ;RIPPLE FILTER

OUTPUT
EP S1-3 ;EP SWITCH
EQ OUT ;PB EQUALIZED
LINE OUT;AUDIO LINE
LP S1-3 ;LP SWITCH
REC OUT ;AUDIO REC LEVEL
REC SW ;REC HEAD VOLTAGE CONTROL SWITCH
R FILO ;RIPPLE FILTER

LM2903DQ (RAYTHEON)
LM2903M (RAYTHEON) FLAT PACKAGE
NJM2903D (JRC)
NJM2903M (JRC) FLAT PACKAGE

DUAL VOLTAGE COMPARATORS

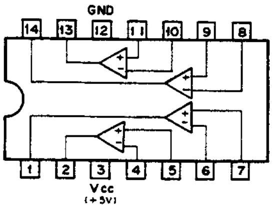
- TOP VIEW -


8
7
6
5
Vcc (+2to+36V)
GND
1
2
3
4

LM339N (TI)

QUAD COMPARATORS

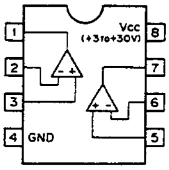
- TOP VIEW -


GND
14
13
12
11
10
9
8
1
2
3
4
5
6
7
Vcc (+5V)

LM358P (TI)
UPC358C (NEC)

DUAL OPERATIONAL AMPLIFIERS

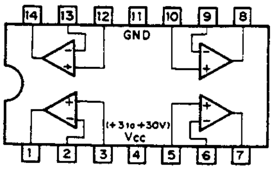
- TOP VIEW -


Vcc (+3to+30V)
1
2
3
4
GND
8
7
6
5

LM324N (TI)

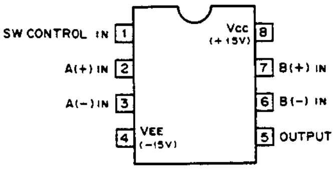
QUAD OPERATIOAL AMPLIFIERS

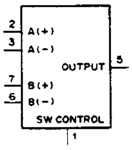
- TOP VIEW -

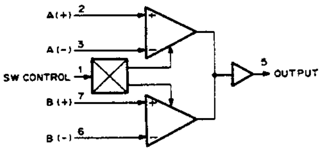

14
13
12
11
10
9
8
GND
(+3to+30V) Vcc
1
2
3
4
5
6
7

M5201P (MITSUBISHI)

DUAL OPERATIONAL AMPLIFIERS WITH SWITCHED OUTPUT
- TOP VIEW -

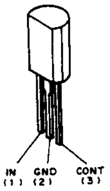

SW CONTROL IN 1
A(+) IN 2
A(−) IN 3
4 VEE (−15V)
Vcc (+15V) 8
7 B(+) IN
6 B(−) IN
5 OUTPUT

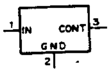

2 A(+)
3 A(−)
7 B(+)
6 B(−)
OUTPUT 5
SW CONTROL
1


A(+) 2
A(−) 3
SW CONTROL 1
B(+) 7
B(−) 6
5 OUTPUT

M5237L (MITSUBISHI)

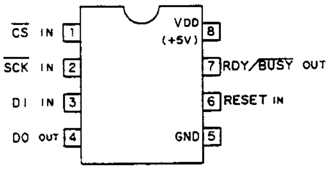
ADJUSTABLE VOLTAGE REGULATOR

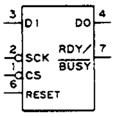

IN (1)
GND (2)
CONT (3)

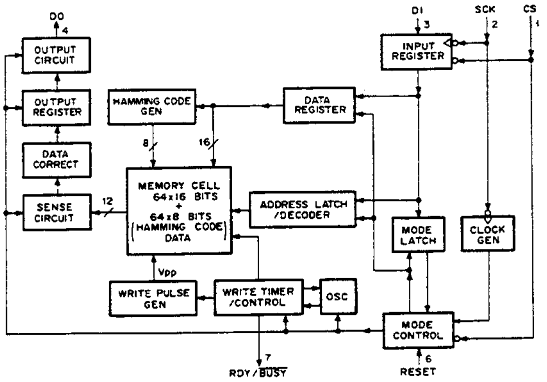

1 IN
CONT 3
GND
2

M6M80011AP (MITSUBISHI)

C-MOS 1k (64x16) BITS ELECTRICALLY ERASABLE PROM
- TOP VIEW -


CS IN 1
SCK IN 2
DI IN 3
DO OUT 4
VDD (+5V) 8
7 RDY/BUSY OUT
6 RESET IN
GND 5

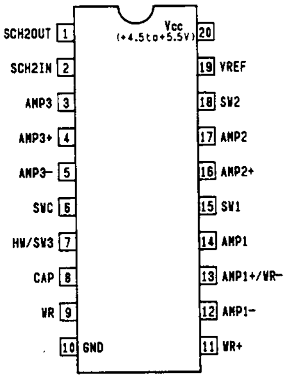

3 DI
DO 4
2 SCK
RDY/BUSY 7
CS
6 RESET

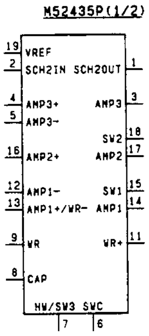

DO 4
OUTPUT CIRCUIT
OUTPUT REGISTER
DATA CORRECT
SENSE CIRCUIT
12
HAMMING CODE GEN
8
16
MEMORY CELL 64x16 BITS + 64x8 BITS (HAMMING CODE) DATA
VDD
WRITE PULSE GEN
WRITE TIMER /CONTROL
OSC
DATA REGISTER
ADDRESS LATCH /DECODER
DI 3
SCK 2
CS 1
INPUT REGISTER
MODE LATCH
CLOCK GEN
MODE CONTROL
7 RDY/BUSY
6 RESET

CS : CHIP SELECT INPUT
DI : DATA INPUT
DO : DATA OUTPUT
RDY/BUSY : BUSY OUTPUT
RESET : RESET INPUT
SCK : CLOCK INPUT

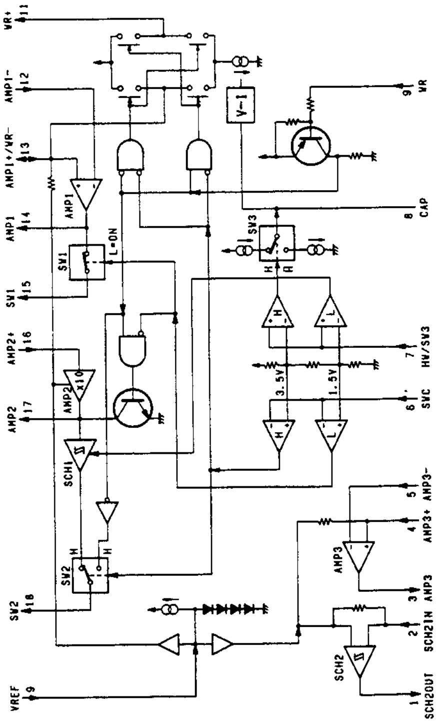
M52435P (MITSUBISHI)

VTR DIGITAL SERVO INTERFACE
- TOP VIEW -

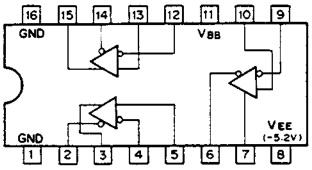

SCH2OUT 1
SCH2IN 2
AMP3 3
AMP3+ 4
AMP3− 5
SWC 6
HW/SW3 7
CAP 8
WR 9
10 GND
Vcc (+4.5to+5.5V) 20
19 VREF
18 SW2
17 AMP2
16 AMP2+
15 SW1
14 AMP1
13 AMP1+/WR−
12 AMP1−
11 WR+


M52435P(1/2)
19 VREF
2 SCH2IN
SCH2OUT 1
4 AMP3+
5 AMP3−
AMP3 3
SW2 18
16 AMP2+
AMP2 17
12 AMP1−
SW1 15
13 AMP1+/WR−
AMP1 14
9 WR
WR+ 11
8 CAP
HW/SW3 SWC
7 6

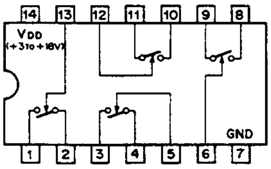
AMP1	: AMP.1 OUTPUT
AMP1+/WR−	: AMP.1 NON-INVERTING INPUT/NEGATIVE WRITE OUTPUT
AMP1−	: AMP.1 INVERTING INPUT
AMP2	: AMP.2 OUTPUT (x10)
AMP2+	: AMP.2 INPUT
AMP3	: AMP.3 OUTPUT
AMP3+	: AMP.3 NON-INVERTING INPUT
AMP3−	: AMP.3 INVERTING INPUT
CAP	: CAPASITOR CONNECTING TERMINAL FOR V-I CONVERTER
HW/SW3	: HYSTERESIS WIDTH SELECT INPUT FOR SCHMITT 1 / TRIGGER INPUT FOR SWITCH 3(TRAPEZOID WAVE GENERATE)
SCH2IN	: SCHMITT 2 INPUT
SCH2OUT	: SCHMITT 2 OUTPUT
SW1	: SWITCH 1 OUTPUT
SW2	: SWITCH 2 OUTPUT
SWC	: SWCTHES 1 AND 2 CONTROL INPUT (REC/PLAYBAK SWICTHOVER)
VREF	: REFERANCE VOLTAGE INPUT
WR	: WRITE SIGNAL INPUT
WR+	: POSITIVE WRITE OUTPUT

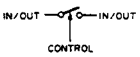

WR+ 11
AMP1− 12
AMP1+/WR− 13
AMP1 14
SW1 15
AMP2+ 16
AMP2 17
SW2 18
VREF 9
WR 9
CAP 8
HW/SW3 7
SWC 6
AMP3− 5
AMP3+ 4
AMP3 3
SCH2IN 2
SCH2OUT 1
V-I
AMP1
SW1
L=ON
SW3
H
L
AMP2 x10
SCH1
SW2
3.5V
1.5V
AMP3
SCH2

MC10H116M (MOTOROLA) FLAT PACKAGE
ECL TRIPLE DIFFERENTIAL OR/NOR LINE RECEIVERS
– TOP VIEW –


16
15
14
13
12
11
10
9
GND
VBB
GND
VEE
(−5.2V)
1
2
3
4
5
6
7
8

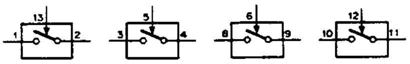
MC14066BCP (MOTOROLA)
C-MOS QUAD BILATERAL ANALOG SWITCH
– TOP VIEW –


14
13
12
11
10
9
8
VDD
(+3 to +18V)
GND
1
2
3
4
5
6
7

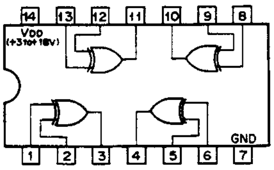

IN/OUT
IN/OUT
CONTROL

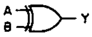
CONTROL	SWITCH
0	OFF
1	ON

0; LOW LEVEL
1; HIGH LEVEL


13
1
2
5
3
4
6
8
9
12
10
11

MC14070BCP (MOTOROLA)
C-MOS QUAD EXCLUSIVE OR GATES
– TOP VIEW –


14
13
12
11
10
9
8
VDD
(+3 to +18V)
GND
1
2
3
4
5
6
7

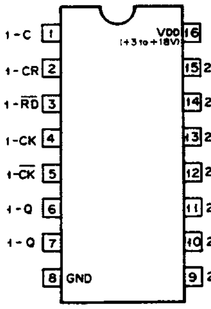


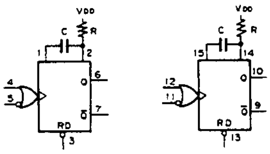
$Y = \bar{A} \cdot B + A \cdot \bar{B}$

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

0; LOW LEVEL
1; HIGH LEVEL

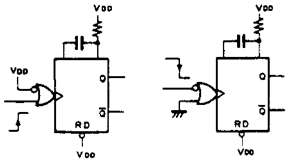
MC14538BCP (MOTOROLA)
MC14538BF (MOTOROLA) FLAT PACKAGE
C-MOS DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATORS
– TOP VIEW –


1-C 1
1-CR 2
1-$\overline{RD}$ 3
1-CK 4
1-$\overline{CK}$ 5
1-Q 6
1-$\bar{Q}$ 7
8 GND
VDD 16
(+3 to +18V)
15 2-C
14 2-CR
13 2-$\overline{RD}$
12 2-CK
11 2-$\overline{CK}$
10 2-Q
9 2-$\bar{Q}$

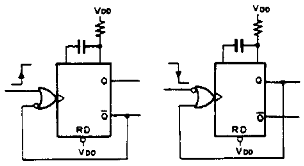

VDD
C
R
1
2
4
5
6
Q
$\bar{Q}$
7
RD
3
VDD
C
R
15
14
12
11
10
Q
$\bar{Q}$
9
RD
13

OUTPUT PULSE WIDTH = C·R

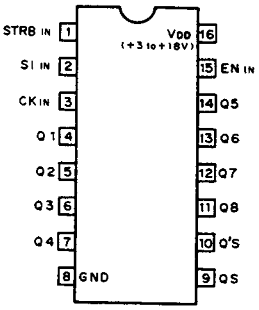
RETRIGGERABLE M.M.V

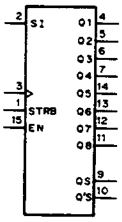

VDD
VDD
VDD
Q
$\bar{Q}$
RD
VDD
VDD
Q
$\bar{Q}$
RD
VDD

NON-RETRIGGERABLE M.M.V


VDD
Q
$\bar{Q}$
RD
VDD
VDD
Q
$\bar{Q}$
RD
VDD

MC14094BCP (MOTOROLA)
TC4094BP (TOSHIBA)
C-MOS 8-STAGE SHIFT-AND-STORE BUS REGISTER
– TOP VIEW –


STRB IN 1
SI IN 2
CK IN 3
Q1 4
Q2 5
Q3 6
Q4 7
8 GND
VDD 16
(+3 to +18V)
15 EN IN
14 Q5
13 Q6
12 Q7
11 Q8
10 Q'S
9 QS

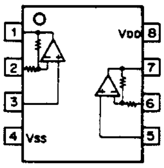

2
SI
3
1
STRB
15
EN
Q1 4
Q2 5
Q3 6
Q4 7
Q5 14
Q6 13
Q7 12
Q8 11
QS 9
Q'S 10

SI : SERIAL DATA INPUT
CK : CLOCK INPUT
STRB : STROBE INPUT
EN : OUTPUT ENABLE INPUT
Q1 – Q8 : PARALLEL DATA OUTPUTS
QS, Q'S : SERIAL DATA OUTPUTS

INPUTS				PARALLEL OUT		SERIAL OUT	
CK	EN	STRB	SI	Q1	Qn	QS	Q'S
↑	0	X	X	HI-Z	HI-Z	Q7	NC
↓	0	X	X	HI-Z	HI-Z	NC	Q7
↑	1	0	X	NC	NC	Q7	NC
↑	1	1	0	0	Qn-1	Q7	NC
↑	1	1	1	1	Qn-1	Q7	NC
↓	1	1	1	NC	NC	NC	Q7

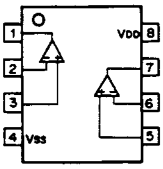
1; HIGH
0; LOW
X; DON'T CARE
HI-Z; HIGH IMPEDANCE
NC ; NO CHANGE

MC14576AF (MOTOROLA) FLAT PACKAGE
MC14576BF (MOTOROLA) FLAT PACKAGE
C-MOS DUAL VIDEO AMPLIFIERS
– TOP VIEW –


1
2
3
4
VSS
VDD
8
7
6
5

$|V_{DD}| + |V_{SS}| = +5V$ to $+12V$

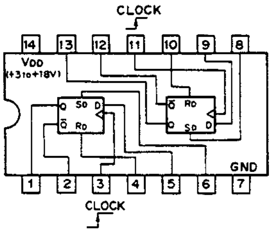
MC14577AF (MOTOROLA) FLAT PACKAGE
MC14577BF (MOTOROLA) FLAT PACKAGE
C-MOS DUAL VIDEO AMPLIFIERS
– TOP VIEW –


1
2
3
4
VSS
VDD
8
7
6
5

$|V_{DD}| + |V_{SS}| = +5V$ to $+12V$

HD14013BP (HITACHI)
MC14013BCP (MOTOROLA)

C-MOS DUAL D-TYPE FLIP-FLOPS WITH DIRECT SET/RESET
– TOP VIEW –


CLOCK
14
13
12
11
10
9
8
VDD
(+3 to +18V)
SD
RD
D
Q
GND
1
2
3
4
5
6
7
CLOCK

DIRECT R-S FLIP-FLOP

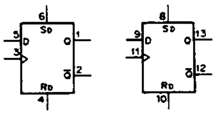
SD	RD	Q	$\bar{Q}$
0	0	Qn	$\bar{Q}$n
0	1	0	1
1	0	1	0
1	1	1	1

0: LOW LEVEL
1: HIGH LEVEL

D-TYPE FLIP-FLOP

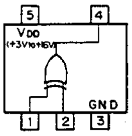
CKn	CKn+1
D	Q
0	0
1	1

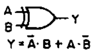
CLOCK CK; ↑
CKn; BEFORE CLOCK
CKn+1; AFTER CLOCK


6
SD
5
D
3
1
Q
$\bar{Q}$
2
RD
4
8
SD
9
D
11
13
Q
$\bar{Q}$
12
RD
10

TC4S30F (TOSHIBA) FLAT PACKAGE

C-MOS EXCLUSIVE OR GATE
– TOP VIEW –


5
4
VDD
(+3V to +6V)
GND
1
2
3



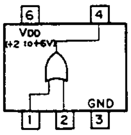
$Y = \bar{A} \cdot B + A \cdot \bar{B}$

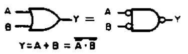
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

0; LOW LEVEL
1; HIGH LEVEL

SC7S32F (MOTOROLA) FLAT PACKAGE
TC7S32F (TOSHIBA) FLAT PACKAGE

C-MOS 2-INPUT OR GATE
– TOP VIEW –


6
4
VDD
(+2 to +6V)
GND
1
2
3



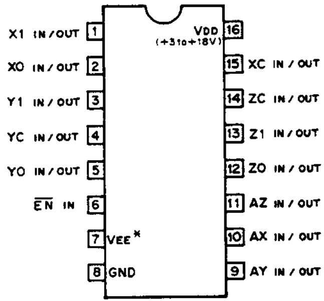
$Y = A + B = \overline{\bar{A} \cdot \bar{B}}$

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

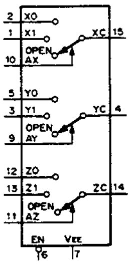
0 ; LOW LEVEL
1 ; HIGH LEVEL

HD14053BFP (HITACHI) FLAT PACKAGE
MC14053BCP (MOTOROLA)
MC14053BF (MOTOROLA) FLAT PACKAGE
UPD4053BC (NEC)

C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXERS/DEMULTIPLEXERS
– TOP VIEW –


X1 IN/OUT 1
X0 IN/OUT 2
Y1 IN/OUT 3
YC IN/OUT 4
Y0 IN/OUT 5
$\overline{EN}$ IN 6
7 VEE*
8 GND
VDD (+3 to +18V) 16
15 XC IN/OUT
14 ZC IN/OUT
13 Z1 IN/OUT
12 Z0 IN/OUT
11 AZ IN/OUT
10 AX IN/OUT
9 AY IN/OUT

VEE*; VDD−VEE = +3 to +18V

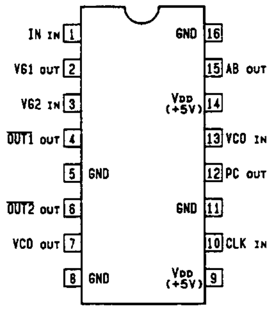

2 X0
1 X1
XC 15
OPEN
10 AX
5 Y0
3 Y1
YC 4
OPEN
9 AY
12 Z0
13 Z1
ZC 14
OPEN
11 AZ
EN
VEE
6
7

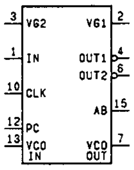
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE.

CONT. INPUTS		ON CHANNEL
EN	A (X,Y,Z)	
0	0	0
0	1	1
1	X	OPEN

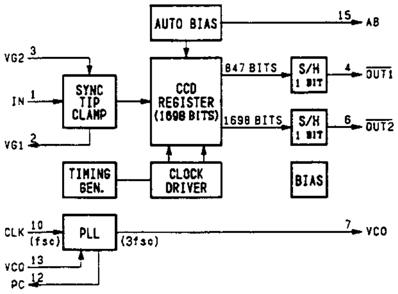
CXL1506M (SONY) FLAT PACKAGE

C-MOS CCD 1H/2H DELAY LINE FOR PAL VIDEO SYSTEM
– TOP VIEW –


IN IN 1
VG1 OUT 2
VG2 IN 3
$\overline{OUT1}$ OUT 4
5 GND
$\overline{OUT2}$ OUT 6
VCO OUT 7
8 GND
GND 16
15 AB OUT
VDD (+5V) 14
13 VCO IN
12 PC OUT
GND 11
10 CLK IN
VDD (+5V) 9

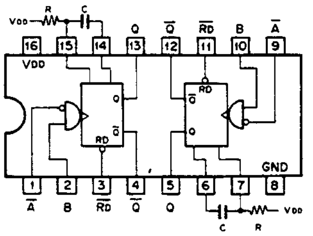

3
VG2
VG1
2
1
IN
OUT1
4
OUT2
6
10
CLK
AB
15
12
PC
13
VCO IN
VCO OUT
7

AB	: AUTO BIAS DC OUTPUT
CLK	: fsc CLOCK INPUT (4.433619 MHz)
IN	: POSITIVE SIGNAL INPUT
OUT1	: 1H DELAY SIGNAL OUTPUT (NEGATIVE)
OUT2	: 2H DELAY SIGNAL OUTPUT (NEGATIVE)
PC	: PHASE COMPARATER OUTPUT
VCO	: 3 • fsc CLOCK OUTPUT (PIN 7)
VCO	: VCO INPUT (PIN 13)
VG1	: GATE BIAS 1 DC OUTPUT
VG2	: GATE BIAS 2 DC INPUT


AUTO BIAS
15
AB
VG2
3
IN
1
SYNC TIP CLAMP
CCD REGISTER (1698 BITS)
847 BITS
S/H 1 BIT
4
$\overline{OUT1}$
1698 BITS
S/H 1 BIT
6
$\overline{OUT2}$
VG1
2
TIMING GEN.
CLOCK DRIVER
BIAS
CLK
10
(fsc)
PLL
(3fsc)
7
VCO
VCO
13
PC
12

MC74HC123AF (MOTOROLA) FLAT PACKAGE
TC74HC123AF (TOSHIBA) FLAT PACKAGE

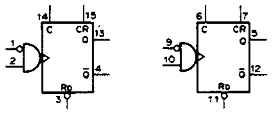
C-MOS DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATORS
– TOP VIEW –


VDD
R
C
Q
$\bar{Q}$
$\overline{RD}$
B
$\bar{A}$
16
15
14
13
12
11
10
9
VDD
RD
RD
GND
1
2
3
4
5
6
7
8
$\bar{A}$
B
$\overline{RD}$
$\bar{Q}$
Q
C
R
VDD

INPUT			OUTPUT	
RD	A	B	Q	$\bar{Q}$
0	X	X	0	1
1	1	X	0	1
1	X	0	0	1
1	0	↑	⊓	⊔
1	↓	1	⊓	⊔
↑	0	1	⊓	⊔

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

OUTPUT PULSE WIDTH ≈ 0.46CR

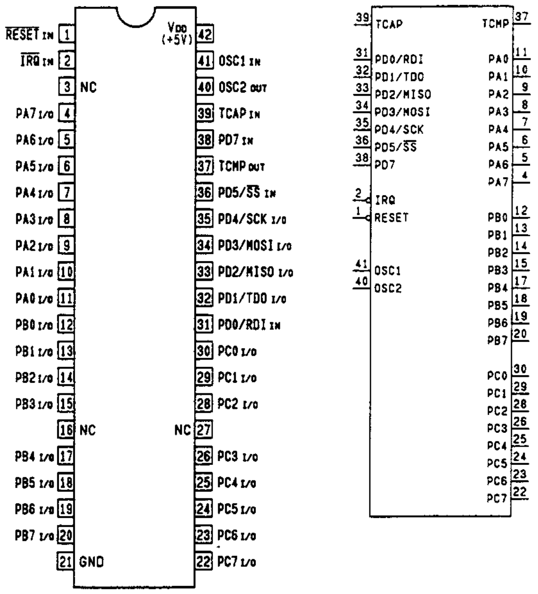

14
15
C
CR
13
1
2
Q
$\bar{Q}$
4
RD
3
6
7
C
CR
5
9
10
Q
$\bar{Q}$
12
RD
11

NOTE :

TYPE	VDD
TC74HCT123AF	+5V
OTHER TYPES	+2 to +6V

MC68HC05C4 (MOTOROLA)

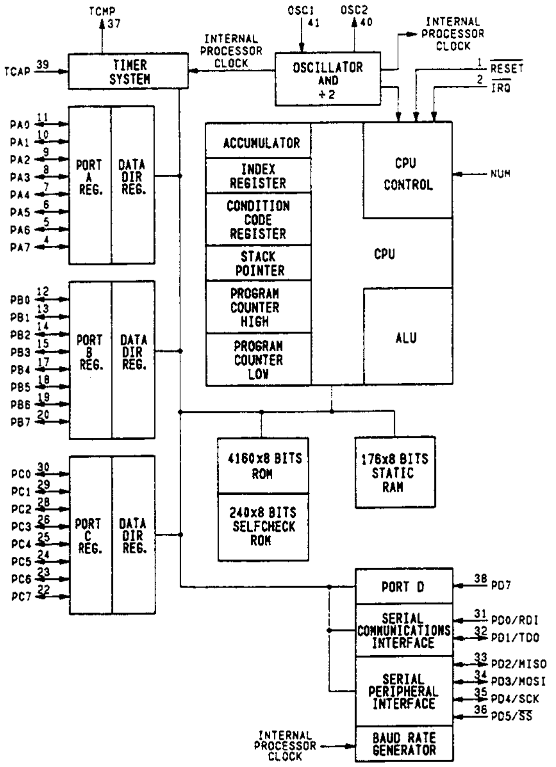
C-MOS 8-BIT MICROCONTROLLER UNIT
- TOP VIEW -


RESET IN 1
IRQ IN 2
3 NC
PA7 I/O 4
PA6 I/O 5
PA5 I/O 6
PA4 I/O 7
PA3 I/O 8
PA2 I/O 9
PA1 I/O 10
PA0 I/O 11
PB0 I/O 12
PB1 I/O 13
PB2 I/O 14
PB3 I/O 15
16 NC
PB4 I/O 17
PB5 I/O 18
PB6 I/O 19
PB7 I/O 20
21 GND
VDD (+5V) 42
41 OSC1 IN
40 OSC2 OUT
39 TCAP IN
38 PD7 IN
37 TCMP OUT
36 PD5/SS IN
35 PD4/SCK I/O
34 PD3/MOSI I/O
33 PD2/MISO I/O
32 PD1/TDO I/O
31 PD0/RDI IN
30 PC0 I/O
29 PC1 I/O
28 PC2 I/O
NC 27
26 PC3 I/O
25 PC4 I/O
24 PC5 I/O
23 PC6 I/O
22 PC7 I/O
39 TCAP
TCMP 37
31 PD0/RDI
32 PD1/TDO
33 PD2/MISO
34 PD3/MOSI
35 PD4/SCK
36 PD5/SS
38 PD7
2 IRQ
1 RESET
41 OSC1
40 OSC2
PA0 11
PA1 10
PA2 9
PA3 8
PA4 7
PA5 6
PA6 5
PA7 4
PB0 12
PB1 13
PB2 14
PB3 15
PB4 17
PB5 18
PB6 19
PB7 20
PC0 30
PC1 29
PC2 28
PC3 26
PC4 25
PC5 24
PC6 23
PC7 22

INPUT
IRQ : INTERRUPT REQUEST
OSC1 : OSCILLATOR FREQUENCY
PD0 – PD5, PD7 : PROGRAMMABLE D PORT
RDI : RECEIVING DATA
RESET : RESET
SS : SUB SELECT
TCAP : CAPTURE FEATURE FOR THE ON-CHIP PROGRAMMABLE TIMER

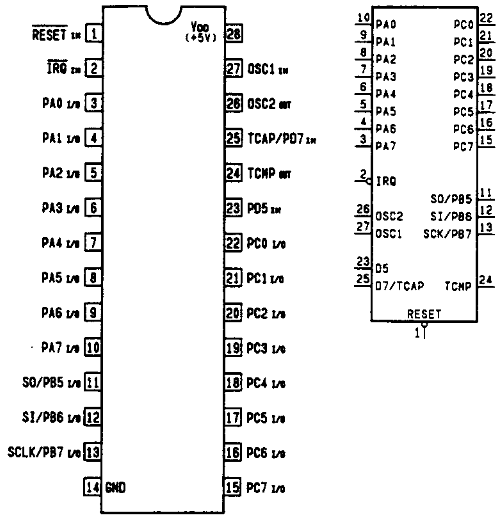
OUTPUT
OSC2 : OSCILLATOR FREQUENCY
SCK : SERIAL CLOCK
TCMP : COMPARE FEATURE OF THE ON-CHIP TIMER
TDO : TRANSMITION DATA

INPUT/OUTPUT
MISO : MASTER INPUT, SUB OUTPUT
MOSI : MASTER OUTPUT, SUB INPUT
PA0 – PA7 : PROGRAMMABLE A PORT
PB0 – PB7 : PROGRAMMABLE B PORT
PC0 – PC7 : PROGRAMMABLE C PORT


TCMP 37
TCAP 39
TIMER SYSTEM
INTERNAL PROCESSOR CLOCK
OSC1 41
OSC2 40
OSCILLATOR AND ÷2
INTERNAL PROCESSOR CLOCK
1 RESET
2 IRQ
PA0 11
PA1 10
PA2 9
PA3 8
PA4 7
PA5 6
PA6 5
PA7 4
PORT A REG.
DATA DIR REG.
PB0 12
PB1 13
PB2 14
PB3 15
PB4 17
PB5 18
PB6 19
PB7 20
PORT B REG.
DATA DIR REG.
PC0 30
PC1 29
PC2 28
PC3 26
PC4 25
PC5 24
PC6 23
PC7 22
PORT C REG.
DATA DIR REG.
ACCUMULATOR
INDEX REGISTER
CONDITION CODE REGISTER
STACK POINTER
PROGRAM COUNTER HIGH
PROGRAM COUNTER LOW
CPU CONTROL
NUM
CPU
ALU
4160x8 BITS ROM
240x8 BITS SELFCHECK ROM
176x8 BITS STATIC RAM
PORT D
38 PD7
SERIAL COMMUNICATIONS INTERFACE
31 PD0/RDI
32 PD1/TDO
SERIAL PERIPHERAL INTERFACE
33 PD2/MISO
34 PD3/MOSI
35 PD4/SCK
36 PD5/SS
INTERNAL PROCESSOR CLOCK
BAUD RATE GENERATOR

MC68HC05P7BSC402047B (MOTOROLA)

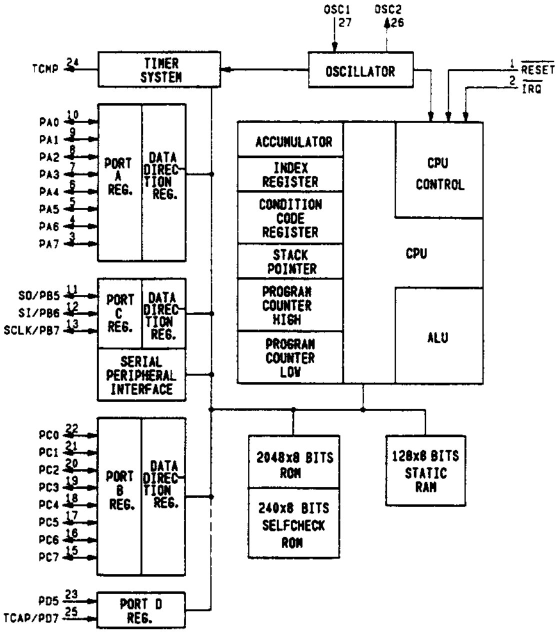
C-MOS 8-BIT 1-CHIP MICROCONTROLLER UNIT
- TOP VIEW -


RESET IN 1
IRQ IN 2
PA0 I/O 3
PA1 I/O 4
PA2 I/O 5
PA3 I/O 6
PA4 I/O 7
PA5 I/O 8
PA6 I/O 9
PA7 I/O 10
SO/PB5 I/O 11
SI/PB6 I/O 12
SCLK/PB7 I/O 13
14 GND
VDD (+5V) 28
27 OSC1 IN
26 OSC2 OUT
25 TCAP/PD7 IN
24 TCMP OUT
23 PD5 IN
22 PC0 I/O
21 PC1 I/O
20 PC2 I/O
19 PC3 I/O
18 PC4 I/O
17 PC5 I/O
16 PC6 I/O
15 PC7 I/O
10 PA0
9 PA1
8 PA2
7 PA3
6 PA4
5 PA5
4 PA6
3 PA7
2 IRQ
26 OSC2
27 OSC1
23 D5
25 D7/TCAP
PC0 22
PC1 21
PC2 20
PC3 19
PC4 18
PC5 17
PC6 16
PC7 15
SO/PB5 11
SI/PB6 12
SCK/PB7 13
TCMP 24
RESET 1

INPUT
IRQ : INTERRUPT REQUEST INPUT
OSC1 : EXTERNAL CLOCK INPUT OR CRYSTAL CONNECTION
PD3, PD5 : D PORT INPUT
RESET : RESET INPUT
SI : SERIAL DATA INPUT
TCAP : CAPTURE FEATURE INPUT FOR TIMER SYSTEM

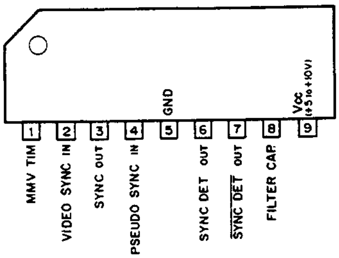
OUTPUT
OSC2 : CRYSTAL CONNECTION
SO : SERIAL DATA OUTPUT
TCMP : COMPARE FEATURE OUTPUT OF TIMER SYSTEM

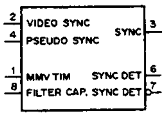
INPUT/OUTPUT
PA0–PA7 : PROGRAMMABLE A PORT
PB5–PB7 : PROGRAMMABLE B PORT
PC0–PC7 : PROGRAMMABLE C PORT
SCLK : SERIAL INTERFACE'S CLOCK INPUT/OUTPUT

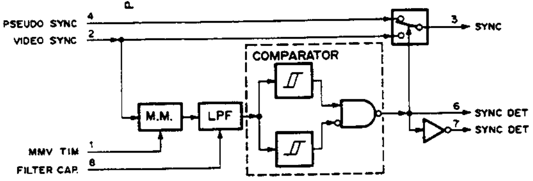

OSC1 27
OSC2 26
TCMP 24
TIMER SYSTEM
OSCILLATOR
1 RESET
2 IRQ
PA0 10
PA1 9
PA2 8
PA3 7
PA4 6
PA5 5
PA6 4
PA7 3
PORT A REG.
DATA DIRECTION REG.
SO/PB5 11
SI/PB6 12
SCLK/PB7 13
PORT C REG.
DATA DIRECTION REG.
SERIAL PERIPHERAL INTERFACE
PC0 22
PC1 21
PC2 20
PC3 19
PC4 18
PC5 17
PC6 16
PC7 15
PORT B REG.
DATA DIRECTION REG.
PD5 23
TCAP/PD7 25
PORT D REG.
ACCUMULATOR
INDEX REGISTER
CONDITION CODE REGISTER
STACK POINTER
PROGRAM COUNTER HIGH
PROGRAM COUNTER LOW
CPU CONTROL
CPU
ALU
2048x8 BITS ROM
240x8 BITS SELFCHECK ROM
128x8 BITS STATIC RAM

NJM2220S (JRC)

VIDEO SYNC DETECTOR
- SIDE VIEW -

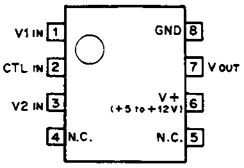

GND
Vcc (+5 to +10V)
1
2
3
4
5
6
7
8
9
MMV TIM
VIDEO SYNC IN
SYNC OUT
PSEUDO SYNC IN
SYNC DET OUT
SYNC DET OUT
FILTER CAP.

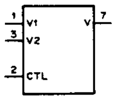

2 VIDEO SYNC
4 PSEUDO SYNC
SYNC 3
1 MMV TIM
SYNC DET 6
8 FILTER CAP.
SYNC DET 7

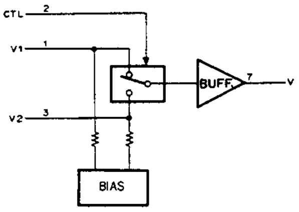

PSEUDO SYNC 4
VIDEO SYNC 2
3 SYNC
COMPARATOR
M.M.
LPF
6 SYNC DET
7 SYNC DET
MMV TIM 1
FILTER CAP. 8

NJM2233BM (JRC) FLAT PACKAGE

2-INPUT VIDEO SIGNAL SWITCH
- TOP VIEW -


V1 IN 1
CTL IN 2
V2 IN 3
4 N.C.
GND 8
7 V OUT
V+ (+5 to +12V) 6
N.C. 5


1 V1
3 V2
2 CTL
V 7

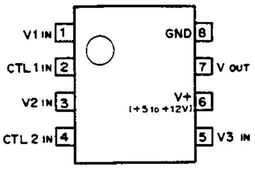

CTL 2
V1 1
V2 3
BUFF.
7 V
BIAS

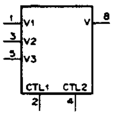
CTL	V
0	V1
1	V2

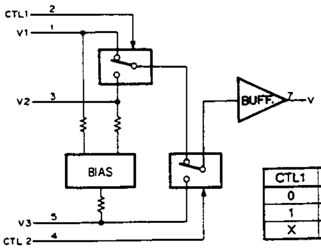
0 : LOW LEVEL
1 : HIGH LEVEL

NJM2234M (JRC) FLAT PACKAGE

3-INPUT VIDEO SIGNAL SWITCH
- TOP VIEW -


V1 IN 1
CTL 1 IN 2
V2 IN 3
CTL 2 IN 4
GND 8
7 V OUT
V+ (+5 to +12V) 6
5 V3 IN


1 V1
3 V2
5 V3
V 8
CTL1 2
CTL2 4

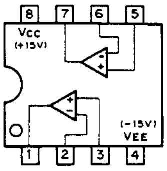

CTL1 2
V1 1
V2 3
BUFF.
7 V
BIAS
V3 5
CTL 2 4

CTL1	CTL2	V
0	0	V1
1	0	V2
X	1	V3

0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE

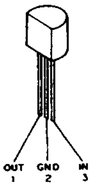
NJM4560D (JRC)
NJM4560MD (JRC) FLAT PACKAGE
NJM5532D-D (JRC)
NJM5532M (JRC) FLAT PACKAGE
RC4560D (RAYTHEON)
RC5532DD (RAYTHEON)
RC5532M (RAYTHEON) FLAT PACKAGE

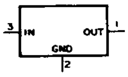
DUAL OPERATIONAL AMPLIFIER
- TOP VIEW -


8
7
6
5
Vcc (+15V)
(-15V) VEE
1
2
3
4

NJM78L05A (JRC) + 5V (100mA)
NJM78L09A (JRC) + 9V (100mA)
RC78L05A (RAYTHEON) + 5V (100mA)
RC78L09A (RAYTHEON) + 9V (100mA)

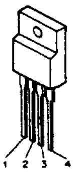
POSITIVE VOLTAGE REGULATOR

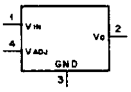

OUT 1
GND 2
IN 3


3 IN
OUT 1
GND 2

PQ05RF2V (SHARP) + 5V

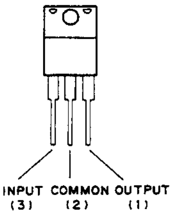
POSITIVE VOLTAGE REGULATOR (2A)

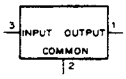



1 VIN
4 VADJ
Vo 2
GND 3

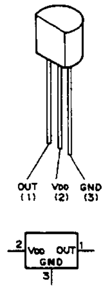
NJM7809FA (JRC) + 9V
RC7809FA (RAYTHEON) + 9V

POSITIVE VOLTAGE REGULATOR
- FRONT VIEW -

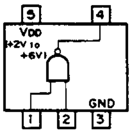

INPUT (3)
COMMON (2)
OUTPUT (1)

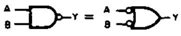

3 INPUT
OUTPUT 1
COMMON 2

S-8054HNM (SEIKO I AND E) 4.50V – 4.70V
C-MOS VOLTAGE DETECTOR


OUT (1)
VDD (2)
GND (3)
2
VDD
OUT
1
GND
3

SC7S00F (MOTOROLA) FLAT PACKAGE
TC7S00F (TOSHIBA) FLAT PACKAGE
C-MOS 2-INPUT NAND GATE
– TOP VIEW –


5
4
VDD
+2V to +6V
GND
1
2
3

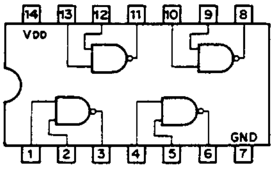


$Y = \overline{A \cdot B} = \overline{A} + \overline{B}$

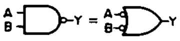
A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

SN74HC00ANS (TI) FLAT PACKAGE
C-MOS QUAD 2-INPUT NAND GATES
– TOP VIEW –


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7

TC74HC00P



$Y = \overline{A \cdot B} = \overline{A} + \overline{B}$

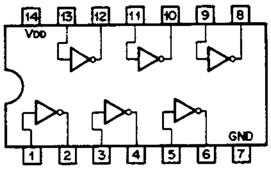
A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

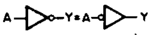
0; LOW LEVEL
1; HIGH LEVEL

NOTE :

TYPE	VDD
TC74AC00 TYPE	+2 to +5.5V
MC74HCT00N	+5V
74ACT00 TYPE	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC04ANS (TI) FLAT PACKAGE
C-MOS HEX INVERTERS
– TOP VIEW –


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



$Y = \overline{A}$

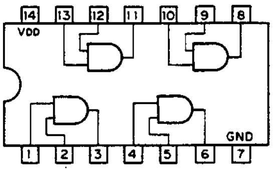
A	Y
0	1
1	0

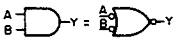
0: LOW LEVEL
1: HIGH LEVEL

NOTE :

TYPE	VDD
74HCT04 TYPE	+5V
TC74AC04 TYPE	+2 to +5.5V
74ACT04 TYPE	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC08ANS (TI) FLAT PACKAGE
C-MOS QUAD 2-INPUT AND GATES
– TOP VIEW –


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



$Y = A \cdot B = \overline{\overline{A} + \overline{B}}$

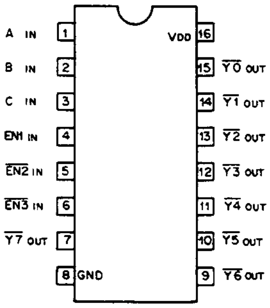
A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

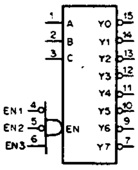
0; LOW LEVEL
1; HIGH LEVEL

NOTE :

TYPE	VDD
TC74AC08F	+2 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC138AN (TI)
C-MOS 3-TO-8 LINE DECODER/DEMULTIPLEXER
– TOP VIEW –


A IN 1
B IN 2
C IN 3
$\overline{EN1}$ IN 4
$\overline{EN2}$ IN 5
EN3 IN 6
$\overline{Y7}$ OUT 7
8 GND
VDD 16
15 $\overline{Y0}$ OUT
14 $\overline{Y1}$ OUT
13 $\overline{Y2}$ OUT
12 $\overline{Y3}$ OUT
11 $\overline{Y4}$ OUT
10 $\overline{Y5}$ OUT
9 $\overline{Y6}$ OUT


1 A
2 B
3 C
EN1 4
EN2 5
EN3 6
EN
Y0 15
Y1 14
Y2 13
Y3 12
Y4 11
Y5 10
Y6 9
Y7 7

INPUTS				OUTPUTS							
EN	C	B	A	Y7	Y6	Y5	Y4	Y3	Y2	Y1	Y0
0	X	X	X	1	1	1	1	1	1	1	1
1	0	0	0	1	1	1	1	1	1	1	0
1	0	0	1	1	1	1	1	1	1	0	1
1	0	1	0	1	1	1	1	1	0	1	1
1	0	1	1	1	1	1	1	0	1	1	1
1	1	0	0	1	1	1	0	1	1	1	1
1	1	0	1	1	1	0	1	1	1	1	1
1	1	1	0	1	0	1	1	1	1	1	1
1	1	1	1	0	1	1	1	1	1	1	1

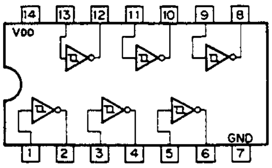
$EN = \overline{EN1} \cdot \overline{EN2} \cdot EN3$

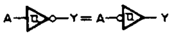
0 : LOW LEVEL
1 : HIGH LEVEL
X ; DON'T CARE

NOTE :

TYPE	VDD
74HCT138 TYPE	+5V
74ACT138 TYPE	+4.5 to +5.5V
TC74AC138 TYPE	+2 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC14AN (TI)
C-MOS HEX SCHMITT TRIGGER INVERTERS
– TOP VIEW –

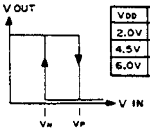

14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



$Y = \overline{A}$

A	Y
0	1
1	0

0 ;LOW LEVEL
1 ;HIGH LEVEL



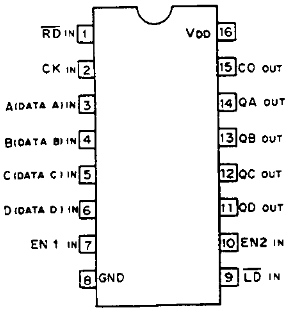
VDD	V_N	V_P
2.0V	0.75V	1.25V
4.5V	1.9V	2.7V
6.0V	2.6V	3.6V

NOTE :

TYPE	VDD
TC74AC14 TYPE	+2 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC163ANS (TI) FLAT PACKAGE

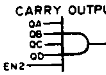
C-MOS PRESETTABLE SYNCHRONOUS 4-BIT BINARY COUNTER
- TOP VIEW -


RD IN 1
CK IN 2
A(DATA A) IN 3
B(DATA B) IN 4
C(DATA C) IN 5
D(DATA D) IN 6
EN 1 IN 7
8 GND
VDD 16
15 CO OUT
14 QA OUT
13 QB OUT
12 QC OUT
11 QD OUT
10 EN2 IN
9 LD IN

MODE SELECTION

CONTROL INPUTS				MODE
RD	LD	EN1	EN2	
0	X	X	X	RESET (SYNCHRONOUS)
1	0	X	X	PRESET (SYNCHRONOUS)
1	1	0	X	NO COUNT
1	1	X	0	NO COUNT
1	1	1	1	COUNT

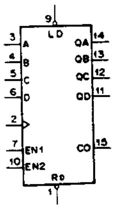
CARRY OUTPUT "CO"


QA
QB
QC
QD
EN2
CO

CO IS HIGH WHEN EN2 INPUT IS HIGH AND COUNT IS "15".

NOTE :

TYPE	VDD
74ACT163 TYPE	+4.5 to +5.5V
TC74AC163 TYPE	+2 to +5.5V
OTHER TYPES	+2 to +6V

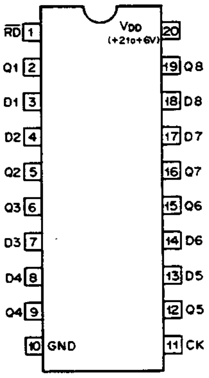

9
LD
3 A
4 B
5 C
6 D
2
7 EN1
10 EN2
RD
1
QA 14
QB 13
QC 12
QD 11
CO 15

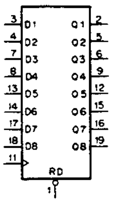
COUNT SEQUENCE

COUNT	OUTPUTS			
	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

SN74HC273ANS (TI) FLAT PACKAGE

C-MOS OCTAL D-TYPE FLIP-FLOPS WITH RESET
- TOP VIEW -

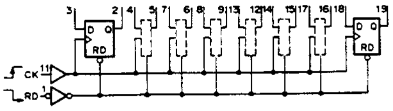

RD 1
Q1 2
D1 3
D2 4
Q2 5
Q3 6
D3 7
D4 8
Q4 9
10 GND
VDD (+2to+6V) 20
19 Q8
18 D8
17 D7
16 Q7
15 Q6
14 D6
13 D5
12 Q5
11 CK


3 D1
4 D2
7 D3
8 D4
13 D5
14 D6
17 D7
18 D8
11
RD
1
Q1 2
Q2 5
Q3 6
Q4 9
Q5 12
Q6 15
Q7 16
Q8 19

EACH FLIP-FLOP

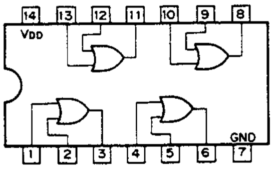
INPUT			OUT
RD	CK	D	Q
0	X	X	0
1	↑	0	0
1	↑	1	1
1	0	X	Q0

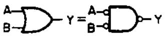
0 ;LOW LEVEL
1 ;HIGH LEVEL
X ;DON'T CARE


3
2
4
5
7
6
8
9
13
12
14
15
17
16
18
19
D
Q
RD
CK 11
RD 1

SN74HC32ANS (TI) FLAT PACKAGE

C-MOS QUAD 2-INPUT OR GATES
- TOP VIEW -


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



$Y = A + B = \overline{\overline{A} \cdot \overline{B}}$

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

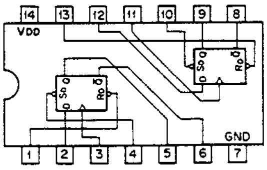
0:LOW LEVEL
1:HIGH LEVEL

NOTE :

TYPE	VDD
TC74AC32 TYPE	+2 to +5.5V
OTHER TYPES	+2 to +6V

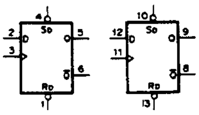
SN74HC74ANS (TI) FLAT PACKAGE

C-MOS DUAL D-TYPE FLIP-FLOPS WITH DIRECT SET/RESET
- TOP VIEW -


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7
SD
RD

INPUTS				OUTPUTS	
$\overline{SD}$	$\overline{RD}$	CK	D	Qn+1	$\overline{Qn+1}$
0	1	X	X	1	0
1	0	X	X	0	1
0	0	X	X	1	1
1	1	↑	1	1	0
1	1	↑	0	0	1
1	1	0	X	Qn	$\overline{Qn}$

0;LOW LEVEL
1;HIGH LEVEL
X;DON'T CARE

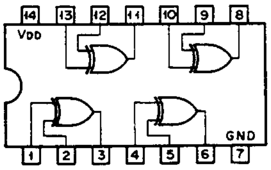

4
SD
2
3
5
6
RD
1
10
SD
12
11
9
8
RD
13

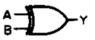
NOTE :

TYPE	VDD
TC74HCT74AF	+5V
TC74AC74 TYPE	+2 to +5.5V
74ACT74 TYPE	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC86AN (TI)
SN74HC86ANS (TI) FLAT PACKAGE
TC74HC86AF (TOSHIBA) FLAT PACKAGE

C-MOS QUAD EXCLUSIVE OR GATES
- TOP VIEW -


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



$Y = \overline{A} \cdot B + A \cdot \overline{B}$

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

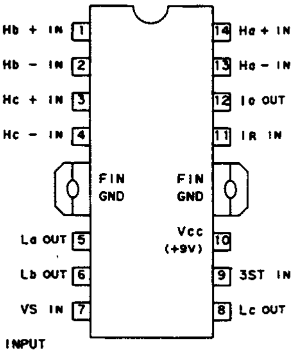
0;LOW LEVEL
1;HIGH LEVEL

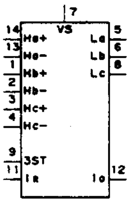
NOTE :

TYPE	VDD
TC74AC86 TYPE	+2 to +5.5V
OTHER TYPES	+2 to +6V

TA7262P-LB (TOSHIBA)

MOTOR DRIVER FOR DIRECT CURRENT COMPACT MOTOR
- TOP VIEW -


Hb + IN 1
Hb - IN 2
Hc + IN 3
Hc - IN 4
La OUT 5
Lb OUT 6
VS IN 7
14 Ha + IN
13 Ha - IN
12 Io OUT
11 IR IN
10 Vcc (+9V)
9 3ST IN
8 Lc OUT
FIN GND
FIN GND

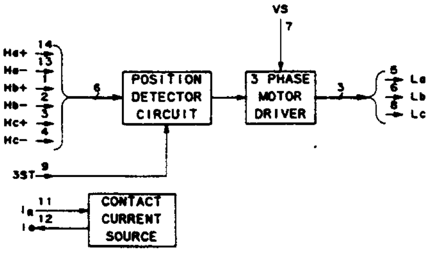

7
VS
14 Ha+
13 Ha-
1 Hb+
2 Hb-
3 Hc+
4 Hc-
9 3ST
11 IR
La 5
Lb 6
Lc 8
Io 12

INPUT

3ST	:MOTOR ROTATIONAL DIRECTION CONTROL
Ha.Hb.Hc +/-	:HOLE ELEMENT AMP
IR	:CONTACT CURRENT SOURCE
VS	:MOTOR INPUT VOLTAGE

OUTPUT

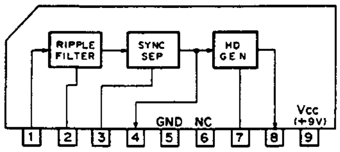
Io	:CONTACT CURRENT SOURCE
La.Lb.Lc	:3 PHASE MOTOR DRIVE


VS
7
Ha+ 14
Ha- 13
Hb+ 1
Hb- 2
Hc+ 3
Hc- 4
6
POSITION DETECTOR CIRCUIT
3 PHASE MOTOR DRIVER
3
5 La
6 Lb
8 Lc
3ST 9
IR 11
Io 12
CONTACT CURRENT SOURCE

TA7357AP (TOSHIBA)

SYNC SEPARATOR/HD PULSE GENERATOR

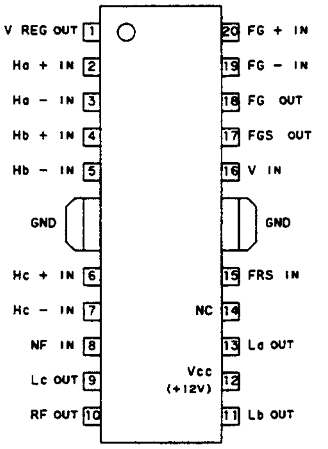
- SIDE VIEW -

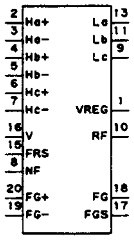

RIPPLE FILTER
SYNC SEP
HD GEN
GND
NC
Vcc (+9V)
1
2
3
4
5
6
7
8
9

TA8424F (TOSHIBA)

MOTOR DRIVER FOR DIRECT CURRENT COMPACT MOTOR

- TOP VIEW -


V REG OUT 1
Ha + IN 2
Ha - IN 3
Hb + IN 4
Hb - IN 5
GND
Hc + IN 6
Hc - IN 7
NF IN 8
Lc OUT 9
RF OUT 10
20 FG + IN
19 FG - IN
18 FG OUT
17 FGS OUT
16 V IN
GND
15 FRS IN
NC 14
13 La OUT
Vcc (+12V) 12
11 Lb OUT

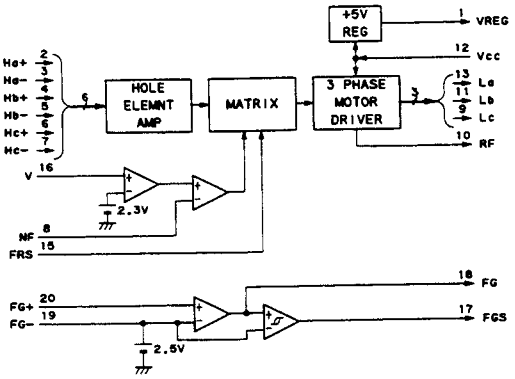

Ha+
Ha-
Hb+
Hb-
Hc+
Hc-
V
FRS
NF
FG+
FG-
La
Lb
Lc
VREG
RF
FG
FGS

INPUT

FG +/-	;FG INPUT AMP
FRS	;MOTOR ROTATIONAL DIRECTION CONTROL
Ha.Hb.Hc +/-	;HOLE ELEMENT AMP
NF	;FEEDBACK OUTPUT CURRENT
V	;CONTROL VOLTAGE

OUTPUT

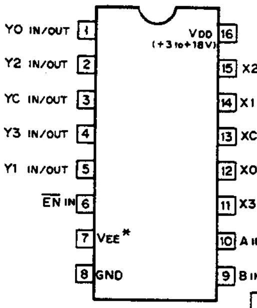
FG	;FG GAIN AMP
FGS	;FG HYSTERESIS AMP
La.Lb.Lc	;3 PHASE MOTOR DRIVE
RF	;OUTPUT CURRENT DETECTOR
V REG	;VOLTAGE REGULATOR

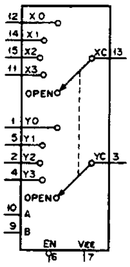

+5V REG
VREG
Vcc
HOLE ELEMNT AMP
MATRIX
3 PHASE MOTOR DRIVER
La
Lb
Lc
RF
Ha+
Ha-
Hb+
Hb-
Hc+
Hc-
V
2.3V
NF
FRS
FG+
FG-
2.5V
FG
FGS

TC4052BF (TOSHIBA) FLAT PACKAGE

C-MOS DUAL 4-CHANNEL ANALOG MULTIPLEXERS/DEMULTIPLEXERS

- TOP VIEW -


Y0 IN/OUT 1
Y2 IN/OUT 2
YC IN/OUT 3
Y3 IN/OUT 4
Y1 IN/OUT 5
EN IN 6
7 VEE*
8 GND
VDD (+3 to +18V) 16
15 X2 IN/OUT
14 X1 IN/OUT
13 XC IN/OUT
12 X0 IN/OUT
11 X3 IN/OUT
10 A IN
9 B IN


X0
X1
X2
X3
XC
OPEN
Y0
Y1
Y2
Y3
YC
OPEN
A
B
EN
VEE

VEE*; VDD-VEE = +3 to +18V

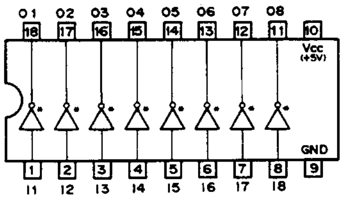
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE.

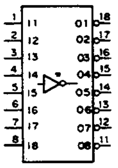
CONTROL INPUTS			"ON" CHANNEL
EN	B	A	
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	X	X	OPEN

TD62381F (TOSHIBA) FLAT PACKAGE

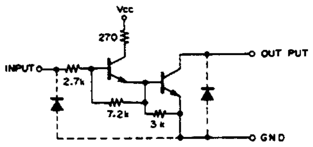
OCTAL LOW SATURATION DRIVER

- TOP VIEW -


O1 O2 O3 O4 O5 O6 O7 O8
18 17 16 15 14 13 12 11 10
Vcc (+5V)
GND
1 2 3 4 5 6 7 8 9
I1 I2 I3 I4 I5 I6 I7 I8


I1 I2 I3 I4 I5 I6 I7 I8
O1 O2 O3 O4 O5 O6 O7 O8

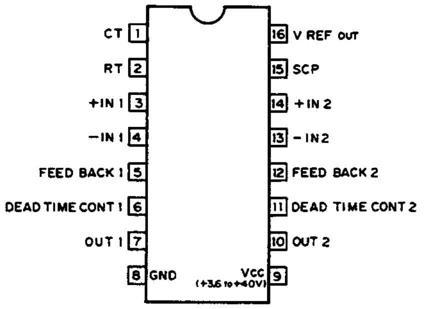
*; OPEN COLLECTOR

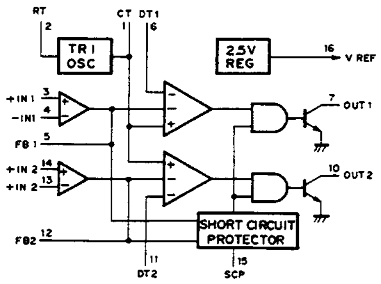

Vcc
270
INPUT
2.7k
7.2k
3k
OUT PUT
GND

TL1451ACNS (TI) FLAT PACKAGE

DUAL PWM POWER CONTROLLER

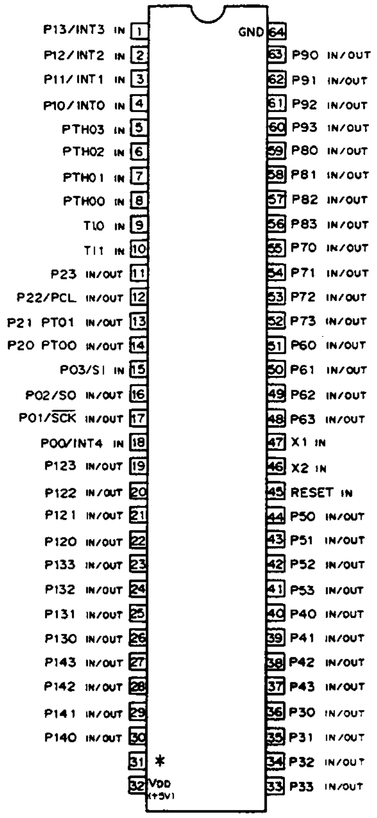
- TOP VIEW -

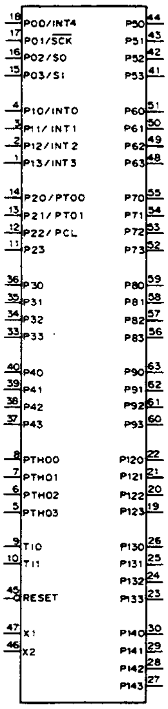

CT 1
RT 2
+IN 1 3
-IN 1 4
FEED BACK 1 5
DEAD TIME CONT 1 6
OUT 1 7
8 GND
Vcc (+3.6 to +40V) 9
16 V REF OUT
15 SCP
14 +IN 2
13 -IN 2
12 FEED BACK 2
11 DEAD TIME CONT 2
10 OUT 2


RT
CT DT1
TRI OSC
2.5V REG
V REF
+IN 1
-IN1
FB 1
+IN 2
+IN 2
FB2
OUT 1
OUT 2
SHORT CIRCUIT PROTECTOR
DT2
SCP

UPD75108CW (NEC)
UPD75P108CW (NEC)

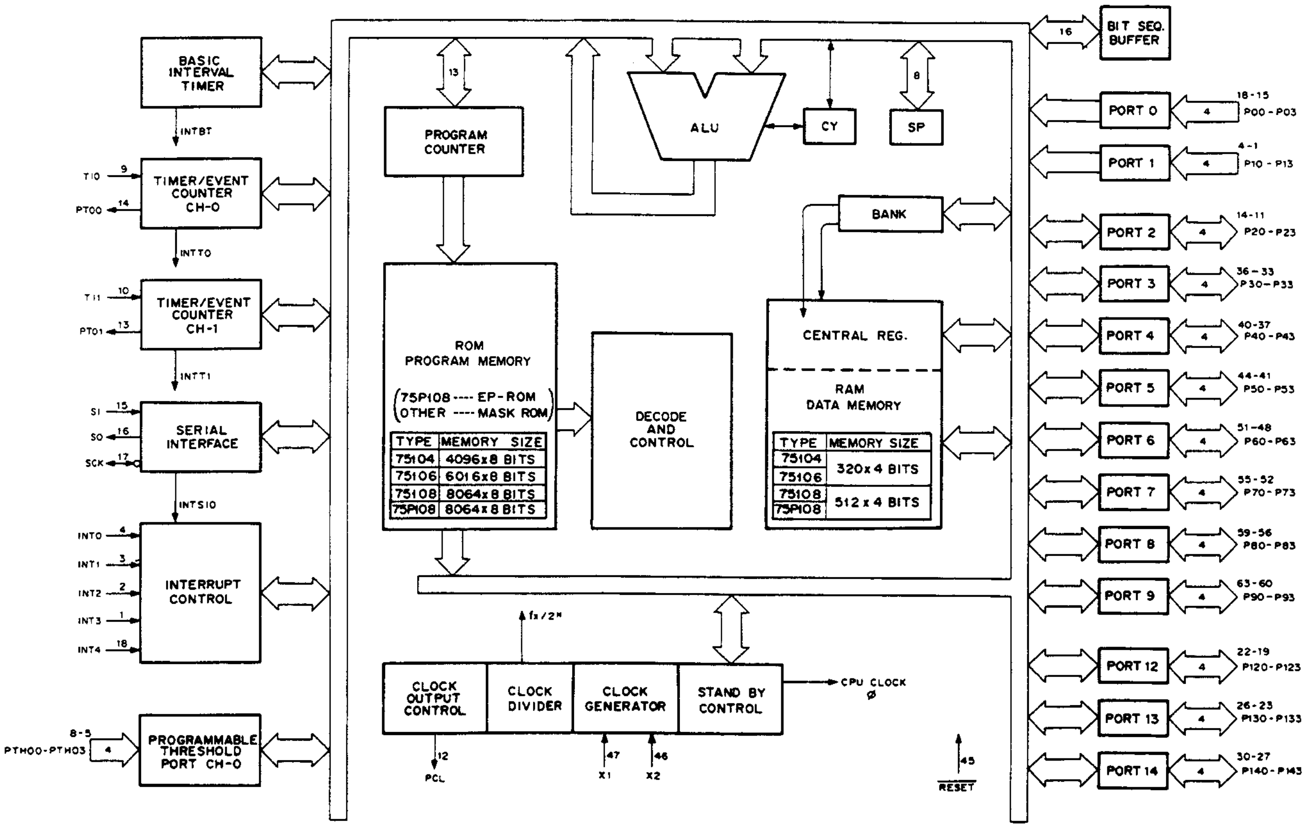
C-MOS 1 CHIP 4-BIT MICROCOMPUTER
- TOP VIEW -


P13/INT3 IN 1
P12/INT2 IN 2
P11/INT1 IN 3
P10/INT0 IN 4
PTH03 IN 5
PTH02 IN 6
PTH01 IN 7
PTH00 IN 8
TI0 IN 9
TI1 IN 10
P23 IN/OUT 11
P22/PCL IN/OUT 12
P21 PT01 IN/OUT 13
P20 PT00 IN/OUT 14
P03/SI IN 15
P02/SO IN/OUT 16
P01/SCK IN/OUT 17
P00/INT4 IN 18
P123 IN/OUT 19
P122 IN/OUT 20
P121 IN/OUT 21
P120 IN/OUT 22
P133 IN/OUT 23
P132 IN/OUT 24
P131 IN/OUT 25
P130 IN/OUT 26
P143 IN/OUT 27
P142 IN/OUT 28
P141 IN/OUT 29
P140 IN/OUT 30
31 *
32 VDD (+5V)
GND 64
63 P90 IN/OUT
62 P91 IN/OUT
61 P92 IN/OUT
60 P93 IN/OUT
59 P80 IN/OUT
58 P81 IN/OUT
57 P82 IN/OUT
56 P83 IN/OUT
55 P70 IN/OUT
54 P71 IN/OUT
53 P72 IN/OUT
52 P73 IN/OUT
51 P60 IN/OUT
50 P61 IN/OUT
49 P62 IN/OUT
48 P63 IN/OUT
47 X1 IN
46 X2 IN
45 RESET IN
44 P50 IN/OUT
43 P51 IN/OUT
42 P52 IN/OUT
41 P53 IN/OUT
40 P40 IN/OUT
39 P41 IN/OUT
38 P42 IN/OUT
37 P43 IN/OUT
36 P30 IN/OUT
35 P31 IN/OUT
34 P32 IN/OUT
33 P33 IN/OUT


18 P00/INT4
17 P01/SCK
16 P02/SO
15 P03/SI
4 P10/INT0
3 P11/INT1
2 P12/INT2
1 P13/INT3
14 P20/PT00
13 P21/PT01
12 P22/PCL
11 P23
36 P30
35 P31
34 P32
33 P33
40 P40
39 P41
38 P42
37 P43
8 PTH00
7 PTH01
6 PTH02
5 PTH03
9 TI0
10 TI1
45 RESET
47 X1
46 X2
P50 44
P51 43
P52 42
P53 41
P60 51
P61 50
P62 49
P63 48
P70 55
P71 54
P72 53
P73 52
P80 59
P81 58
P82 57
P83 56
P90 63
P91 62
P92 61
P93 60
P120 22
P121 21
P122 20
P123 19
P130 26
P131 25
P132 24
P133 23
P140 30
P141 29
P142 28
P143 27

INT0 – INT4	: INTERRUPT INPUTS
P00 – P03	: 4-BIT INPUT PORT (PORT0)
P10 – P13	: 4-BIT INPUT PORT (PORT1)
P20 – P23	: 4-BIT I/O PORT (PORT2)
P30 – P33	: 4-BIT I/O PORT (PORT3), PROGRAMMABLE
P40 – P43	: 4-BIT I/O PORT (PORT4)
P50 – P53	: 4-BIT I/O PORT (PORT5)
P60 – P63	: 4-BIT I/O PORT (PORT6), PROGRAMMABLE
P70 – P73	: 4-BIT I/O PORT (PORT7)
P80 – P83	: 4-BIT I/O PORT (PORT8)
P90 – P93	: 4-BIT I/O PORT (PORT9)
P120 – P123	: 4-BIT I/O PORT (PORT12), OPEN DRAIN
P130 – P133	: 4-BIT I/O PORT (PORT13), OPEN DRAIN
P140 – P143	: 4-BIT I/O PORT (PORT14), OPEN DRAIN
PCL	: CLOCK OUTPUT, PROGRAMABLE
PTH00 – PTH03	: THRESHOLD 4-BIT ANALOG INPUT PORT, PROGRAMABLE
PT00	: TIMER/EVENT COUNTER OUTPUT (CH-1)
PT01	: TIMER/EVENT COUNTER OUTPUT (CH-2)
RESET	: SYSTEM RESET INPUT
SI	: SERIAL INTERFACE DATA INPUT
SO	: SERIAL INTERFACE DATA OUTPUT
SCK	: SERIAL INTERFACE CLOCK INPUT/OUTPUT
TI0	: TIMER/EVENT COUNTER CLOCK INPUT (CH-0)
TI1	: TIMER/EVENT COUNTER CLOCK INPUT (CH-1)
X1, X2	: CONNECTED CRYSTAL FOR SYSTEM CLOCK GENERATE

*; PIN31
Vpp(+5V) ; 75P108 TYPE
NC ; OTHER TYPES

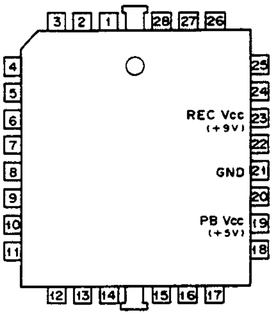

BASIC INTERVAL TIMER
INTBT
TI0 9
PT00 14
TIMER/EVENT COUNTER CH-0
INTT0
TI1 10
PT01 13
TIMER/EVENT COUNTER CH-1
INTT1
SI 15
SO 16
SCK 17
SERIAL INTERFACE
INTSIO
INT0 4
INT1 3
INT2 2
INT3 1
INT4 18
INTERRUPT CONTROL
8-5
PTH00-PTH03
4
PROGRAMMABLE THRESHOLD PORT CH-0
13
PROGRAM COUNTER
ALU
CY
8
SP
BANK
ROM
PROGRAM MEMORY
(75P108 ---- EP-ROM
OTHER ---- MASK ROM)
DECODE AND CONTROL
CENTRAL REG.
RAM
DATA MEMORY
fx/2ᴺ
CLOCK OUTPUT CONTROL
CLOCK DIVIDER
CLOCK GENERATOR
STAND BY CONTROL
CPU CLOCK Ø
12
PCL
47
X1
46
X2
45
RESET
16
BIT SEQ. BUFFER
PORT 0
4
18-15 P00-P03
PORT 1
4
4-1 P10-P13
PORT 2
4
14-11 P20-P23
PORT 3
4
36-33 P30-P33
PORT 4
4
40-37 P40-P43
PORT 5
4
44-41 P50-P53
PORT 6
4
51-48 P60-P63
PORT 7
4
55-52 P70-P73
PORT 8
4
59-56 P80-P83
PORT 9
4
63-60 P90-P93
PORT 12
4
22-19 P120-P123
PORT 13
4
26-23 P130-P133
PORT 14
4
30-27 P140-P143

TYPE	MEMORY SIZE
75104	4096x8 BITS
75106	6016x8 BITS
75108	8064x8 BITS
75P108	8064x8 BITS

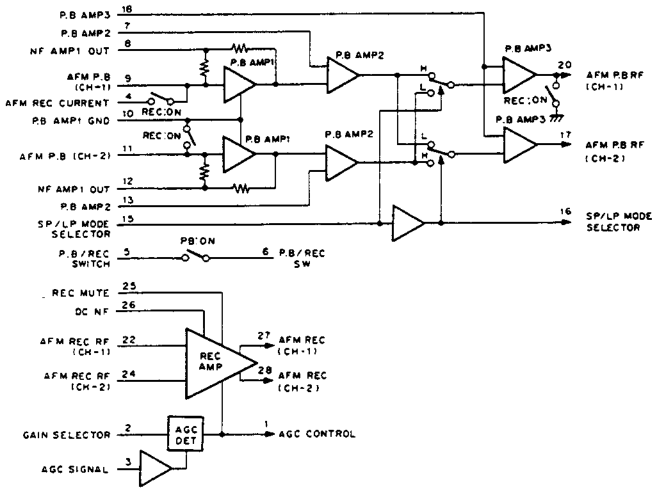
TYPE	MEMORY SIZE
75104	320x4 BITS
75106	
75108	512x4 BITS
75P108	

HA12115MP (HITACHI)

REC/PLAY AMPLIFIER FOR Hi-Fi VHS
- TOP VIEW -

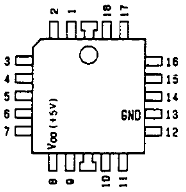

3
2
1
28
27
26
4
5
6
7
8
9
10
11
25
24
REC Vcc
(+9V)
23
22
GND
21
20
PB Vcc
(+5V)
19
18
12
13
14
15
16
17

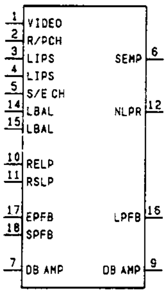
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	O	AGC CONTROL	15	I	SP/LP MODE SELECTOR
2	I	GAIN SELECTOR	16	O	SP/LP MODE SELECTOR
3	I	AGC SIGNAL	17	O	AFM P.B RF (CH-1)
4	I	AFM REC CURRENT	18	I	P.B AMP3
5	I	P.B/REC SWITCH	19	–	P.B Vcc
6	O	P.B/REC SWITCH	20		AFM P.B RF (CH-2)
7	I	P.B AMP2	21	–	GND
8	O	NF AMP1	22	I	AFM REC RF (CH-1)
9	I	AFM P.B (CH-1)	23	–	REC Vcc
10	I	P.B AMP1 GND	24	I	AFM REC RF (CH-2)
11	I	AFM P.B (CH-2)	25	I	REC MUTE
12	I	NF AMP1	26	I	DC NF
13	O	P.B AMP1	27	O	AFM REC (CH-1)
14	–	PRE Vcc	28	O	AFM REC (CH-2)


P.B AMP3 18
P.B AMP2 7
NF AMP1 OUT 8
AFM P.B (CH-1) 9
AFM REC CURRENT 4
P.B AMP1 GND 10
REC:ON
REC:ON
AFM P.B (CH-2) 11
NF AMP1 OUT 12
P.B AMP2 13
SP/LP MODE SELECTOR 15
P.B/REC SWITCH 5
PB:ON
6 P.B/REC SW
P.B AMP1
P.B AMP1
P.B AMP2
P.B AMP2
H
L
L
H
P.B AMP3
REC:ON
P.B AMP3
20 AFM P.B RF (CH-1)
17 AFM P.B RF (CH-2)
16 SP/LP MODE SELECTOR
REC MUTE 25
DC NF 26
AFM REC RF (CH-1) 22
AFM REC RF (CH-2) 24
REC AMP
27 AFM REC (CH-1)
28 AFM REC (CH-2)
GAIN SELECTOR 2
AGC DET
1 AGC CONTROL
AGC SIGNAL 3

VC2076MP (JVC)

Y SIGNAL PROCESSOR FOR VTR
- TOP VIEW -

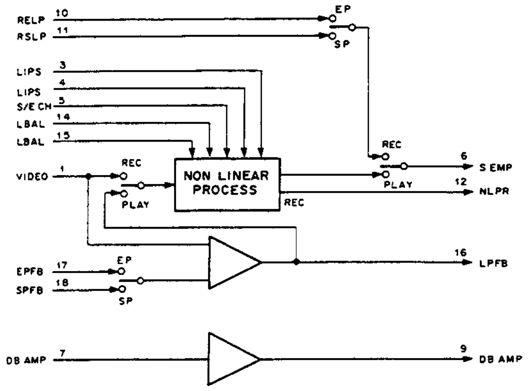

2
1
18
17
3
4
5
6
7
16
15
14
13
12
VCC (+5V)
GND
8
9
10
11


1 VIDEO
2 R/PCH
3 LIPS
4 LIPS
5 S/E CH
14 LBAL
15 LBAL
10 RELP
11 RSLP
17 EPFB
18 SPFB
7 DB AMP
SEMP 6
NLPR 12
LPFB 16
DB AMP 9

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	VIDEO	10	I	RELP
2	I	R/P CH	11	I	RSLP
3	I	LIPS	12	O	NLPR
4	I	LIPS	13	–	GND
5	I	S/E CH	14	I	LBAL
6	O	S EMP	15	I	LBAL
7	I	DB AMP	16	O	LPFB
8	–	Vcc	17	I	EPFB
9	O	DB AMP	18	I	SPFB

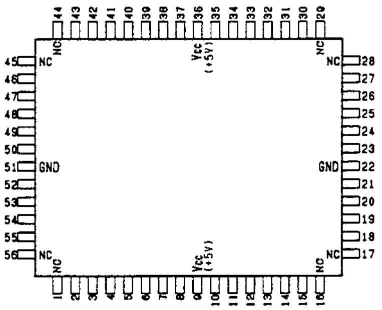
INPUT
DB AMP : 6dB AMP IN
EPFB : PB EP LINEAR PROCESS FEEDBACK
LBAL : LIMITER BALANCE TERMINAL
LIPS : LIMITER POWER SMOOTHING TERMINAL
R/P CH : REC/PB CHANGE
RELP : REC EP LINEAR PROCESS
RSLP : REC SP LINEAR PROCESS
S/E CH : SP/EP CHANGE
SPFB : PB SP LINEAR PROCESS FEEDBACK
VIDEO : VIDEO IN

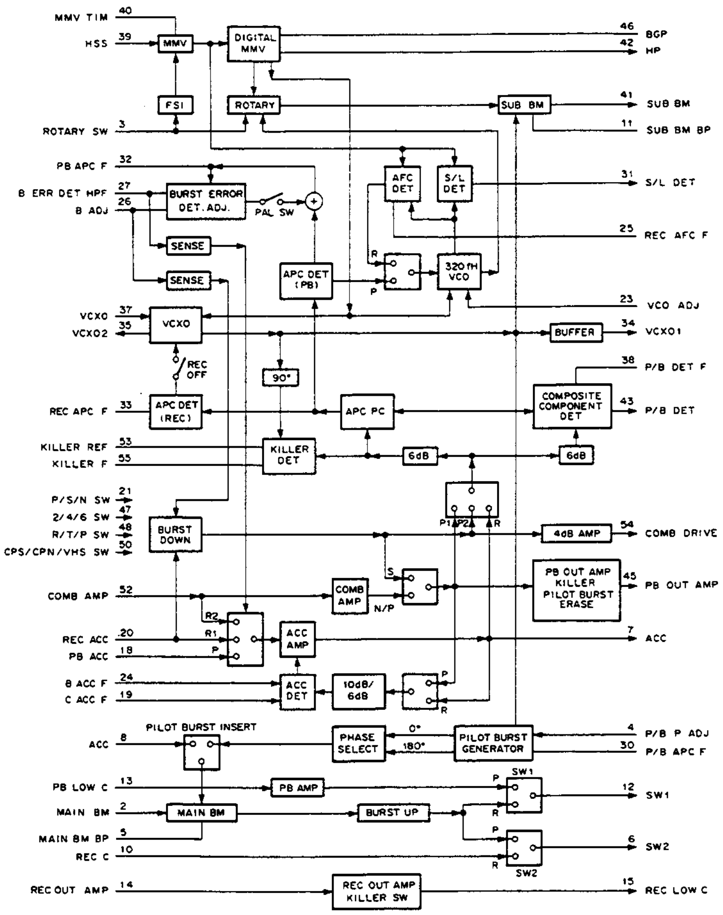
OUTPUT
DB AMP : 6dB AMP OUT
LPFB : PB LINEAR PROCESS FEEDBACK
NLPR : NON LINEAR PROCESS
S EMP : SUB EMPHASIS


RELP 10
RSLP 11
EP
SP
LIPS 3
LIPS 4
S/E CH 5
LBAL 14
LBAL 15
VIDEO 1
REC
PLAY
NON LINEAR PROCESS
REC
REC
PLAY
6 S EMP
12 NLPR
EPFB 17
SPFB 18
EP
SP
16 LPFB
DB AMP 7
9 DB AMP

M52059AFP (MITSUBISHI)

- TOP VIEW -


44
43
42
41
40
39
38
37
36
35
34
33
32
31
30
29
NC
Vcc
(+5V)
NC
45
46
47
48
49
50
51
52
53
54
55
56
NC
GND
NC
28
27
26
25
24
23
22
21
20
19
18
17
NC
GND
NC
NC
Vcc
(+5V)
NC
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16


MMV TIM
40
HSS
39
MMV
DIGITAL MMV
46
BGP
42
HP
FSI
ROTARY
SUB BM
41
SUB BM
11
SUB BM BP
ROTARY SW
3
PB APC F
32
B ERR DET HPF
27
B ADJ
26
BURST ERROR DET. ADJ.
PAL SW
AFC DET
S/L DET
31
S/L DET
25
REC AFC F
SENSE
SENSE
APC DET (PB)
R
P
320 fH VCO
23
VCO ADJ
VCXO
37
VCXO2
35
VCXO
BUFFER
34
VCXO1
REC OFF
90°
38
P/B DET F
REC APC F
33
APC DET (REC)
APC PC
COMPOSITE COMPONENT DET
43
P/B DET
KILLER REF
53
KILLER F
55
KILLER DET
6dB
6dB
P/S/N SW
21
2/4/6 SW
47
R/T/P SW
48
CPS/CPN/VHS SW
50
BURST DOWN
P1
P2
R
4dB AMP
54
COMB DRIVE
S
COMB AMP
52
COMB AMP
N/P
PB OUT AMP KILLER PILOT BURST ERASE
45
PB OUT AMP
R2
R1
P
REC ACC
20
PB ACC
18
ACC AMP
7
ACC
B ACC F
24
C ACC F
19
ACC DET
10dB/6dB
P
R
PILOT BURST INSERT
ACC
8
PHASE SELECT
0°
180°
PILOT BURST GENERATOR
4
P/B P ADJ
30
P/B APC F
PB LOW C
13
PB AMP
SW1
P
R
12
SW1
MAIN BM
2
MAIN BM
BURST UP
P
R
6
SW2
MAIN BM BP
5
REC C
10
SW2
REC OUT AMP
14
REC OUT AMP KILLER SW
15
REC LOW C

(Vcc = + 5V)

PIN No.	I/O	SYMBOL	PIN No.	I/O	SYMBOL	PIN No.	I/O	SYMBOL
1	–	NC	20	I	REC ACC	39	I	HSS
2	I	MAIN BM	21	I	P/S/N SW	40	–	MMV TIM
3	I	ROTARY SW	22	–	GND	41	O	SUB BM
4	I	P/B P ADJ	23	I	VCO ADJ	42	O	HP
5	I	MAIN BM BP	24	–	B ACC F	43	O	P/B DET
6	O	SW2	25	–	REC AFC F	44	–	NC
7	O	ACC	26	I	B ADJ	45	–	NC
8	I	ACC	27	–	B ERR DET HPF	46	O	BGP
9	–	Vcc	28	–	NC	47	I	2/4/6 SW
10	I	REC C	29	–	NC	48	I	R/T/P SW
11	I	SUB BM BP	30	I	P/B G ADJ	49	O	PB OUT AMP
12	O	SW1	31	O	S/L DET	50	I	CPS/CPN/VHS SW
13	I	PB LOW C	32	–	PB APC F	51	–	GND
14	I	REC OUT AMP	33	–	REC APC F	52	I	COMB AMP
15	O	REC LOW C	34	O	VCXO 1	53	–	KILLER REF
16	–	NC	35	O	VCXO 2	54	O	COMB DRIVE
17	–	NC	36	–	Vcc	55	–	KILLER F
18	I	PB ACC	37	I	VCXO	56	–	NC
19	–	C ACC F	38	–	P/B DET F			

INPUT

2/4/6 SW	; 2H/4H/6H SWITCH CONTROL
ACC	; ACC OUTPUT
B ADJ	; BURST ADJUST
COMB AMP	; COMB AMPLIFIER
CPS/CPN/VHS SW	; COMPSITE/COMPONENT/VHS SWITCH CONTROL
HSS	; HORIZONTAL SYNC SIGNAL
MAIN BM	; MAIN BALANCED MODULATOR
MAIN BM BP	; MAIN BALANCED MODULATOR BYPASS CONTROL
P/B G ADJ	; PILOT BURST GAIN ADJUST
P/B P ADJ	; PILOT BURST PHASE ADJUST
P/S/N SW	; PAL/SECAM/NTSC SWITCH CONTROL
PB ACC	; AUTOMATIC COLOR CONTROL AMPLIFIER FOR PB
PB LOW C	; PB LOW RESONANCE CHROMA
R/T/P SW	; REC/TRICK/PB SWITCH CONTROL
REC ACC	; AUTOMATIC COLOR CONTROL AMPLIFIER FOR REC
REC C	; REC CHROMA SIGNAL
REC OUT AMP	; REC SIGNAL OUTPUT AMPLIFIER
ROTARY SW	; ROTATION SWITCH CONTROL
SUB BM BP	; SUB BALANCED MODULATOR BYPASS CONTROL
VCO ADJ	; 320 fH VCO ADJUST
VCXO	; VOLTAGE CONTROLED CRYSTAL OSCILLATOR

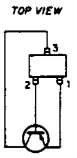
OUTPUT

ACC	; AUTOMATIC COLOR CONTROL AMPLIFITER
BGP	; BURST GATE PULSE
COMB DRIVE	; COMB DRIVE
HP	; HORIZONTAL PULSE
P/B DET	; PILOT BURST DETECTTION
PB OUT AMP	; PB SIGNAL OUTPUT AMPLIFIER
REC LOW C	; REC LOW RESONANCE CHROMA
S/L DET	; SIDE LOCK DETECTION
SUB BM	; SUB BALANCED MODULATOR
SW1	; SWITCH 1
SW2	; SWITCH 2
VCXO 1	; BUFFERED VCXO
VCXO 2	; VOLTAGE CONTROLED CRYSTAL OSCILLATOR

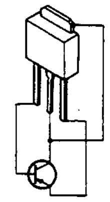
OTHER

B ACC F	; AUTOMATIC COLOR CONTROL FILTER FOR BURST
B ERR DET HPF	; BURST ERROR DETECT HIGH-PASS FILTER
C ACC F	; AUTOMATIC COLOR CONTROL FILTER FOR CHROMA
KILLER F	; COLOR KILLER FILTER
KILLER REF	; COLOR KILLER REFERENCE FILTER
MMV TIM	; MONOSTABLE MULTIVIBRATOR TIMING TIME CONSTANT
P/B DET F	; PILOT BURST DETECTION FILTER
PB APC F	; AUTOMATIC FREQUENCY CONTROL FILTER FOR PB
REC AFC F	; AUTOMATIC FREQUENCY CONTROL FILTER FOR REC
REC APC F	; AUTOMATIC PHASE CONTROL FILTER FOR REC

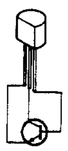
TRANSISTOR


TOP VIEW
3
2
1

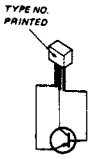
2SA1162
2SA812



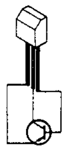
2SB1204



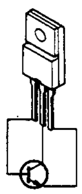
2SC1815
2SC2878


TYPE NO. PRINTED

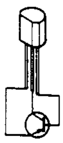
2SA1175



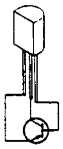
2SB733



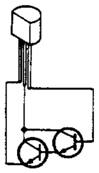
2SC4558



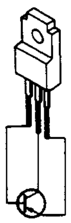
2SA1319



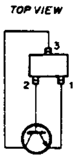
2SB739



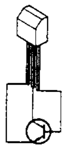
2SD1111



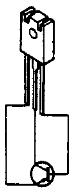
2SA1441
2SB1370


TOP VIEW
3
2
1

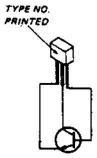
2SC1623
2SC2712
2SC2715
2SC3326N
2SC3735



2SD774



2SB1142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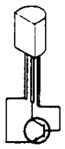
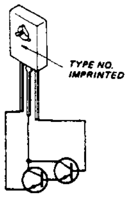


2SD788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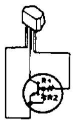
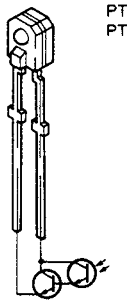
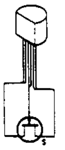
2SD894



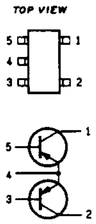
DTC144ES (R1 = 47K, R2 = 47K)



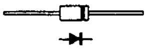
PT483F1
PT483F1S



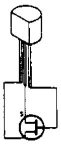
2SK105A


TOP VIEW
5
4
3
1
2
5
4
3
1
2

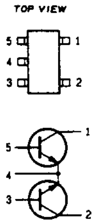
FMS1FE



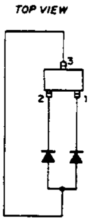
10E2
1SS119



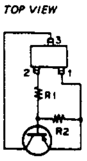
2SK523


TOP VIEW
5
4
3
1
2
5
4
3
1
2

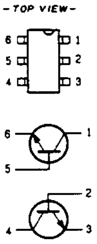
FMW1


TOP VIEW
3
2
1

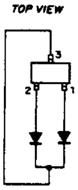
1S2835
1S2836


TOP VIEW
3
2
1
R1
R2

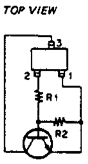
DTA144EK (R1 = 47K, R2 = 47K)
DTB143EK (R1 = 4.7K, R2 = 4.7K)


- TOP VIEW -
6
5
4
1
2
3
6
5
1
2
4
3

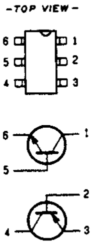
IMX1


TOP VIEW
3
2
1

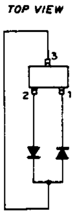
1S2837
MA152WK


TOP VIEW
3
2
1
R1
R2

DTC114YK (R1 = 10K, R2 = 47K)
DTC124EK (R1 = 22K, R2 = 22K)
DTC144EK (R1 = 47K, R2 = 47K)

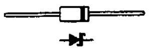

-TOP VIEW-
6
5
4
1
2
3
6
5
1
2
4
3

IMZ1

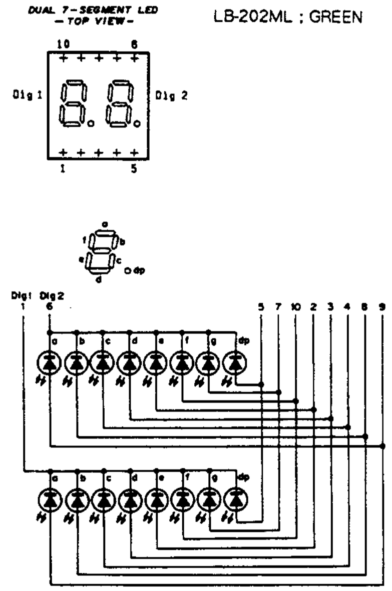

TOP VIEW
3
2
1

1SS123
1SS226

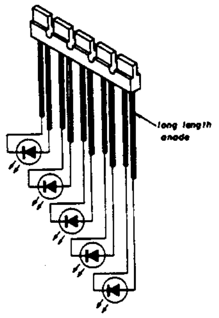
DIODE, PHOTO-COUPLER



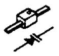
1SS99
ERB81-004
ERC81-004


DUAL 7-SEGMENT LED
— TOP VIEW —
10
6
Dig 1
Dig 2
1
5
a
b
c
d
e
f
g
dp
Dig1 Dig2
1 6
5 7 10 2 3 4 8 9

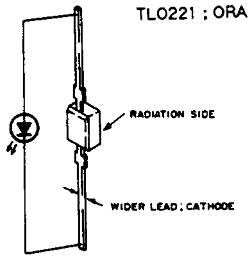
LB-202ML ; GREEN


long length anode

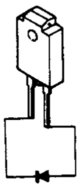
SLJ-165MG5HLF ; GREEN



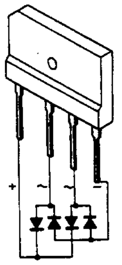
1T32
1T33C


RADIATION SIDE
WIDER LEAD ; CATHODE

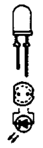
TL0221 ; ORANGE



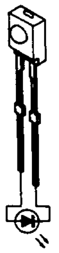
ERC62M-004



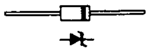
RBV-602



TLUG154 ; GREEN

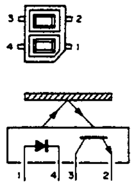


GL451V ; INFRARED
GL451VS1 ; INFRARED

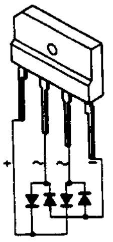


RD ? ?ESB ?
RD ? ?FB ?

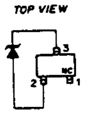
TOP VIEW



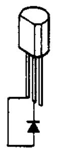
GP-2S09



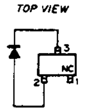
RBA-406B


TOP VIEW
3
NC
2
1

RD ? ?M-B ?
UZM ? ?X



SB05-05NP


TOP VIEW
3
NC
2
1

SB05-05CP

SECTION 13
BOARD LAYOUTS AND SCHEMATIC DIAGRAMS

CIRCUIT FUNCTION OF THE PRINTED CIRCUIT BOARD

SYSTEM	BOARD	CIRCUIT FUNCTION	PAGE
VIDEO	RP-62A	Video & AFM Head Amp.	13-2
	CR-39	Chroma Process	13-4
	VM-12P	Chroma Noise Reducer/Video Memory/Chroma Encoder	13-12
	VO-37A (inc. DUS-592*)	Y/C Video Process	13-24 (13-31)
AUDIO	AU-161A	AFM Process/Normal Audio Process	13-32
	AH-28	Audio/Erase/CTL Head	13-59
SERVO • SYSTEM CONTROL	SS-49A (inc. DUS-445 inc. DUS-534)	Servo & System Control	13-38 (13-41 13-45)
	DR-153(a)	T-Reel Driver	13-53
	DR-153(b)	S-Reel Driver	13-53
	DR-167	CAM Mode Detect & Drum Motor Driver	13-50
	DR-176	Capstan FG Amp. & Capstan Motor Driver	13-51
	DUS-544	Capacitor for T-Brake Solenoid	13-50
	CM-14	Cassette Compartment Motor	13-58(13-39)
	LD-35	Loading Motor	13-58(13-39)
	LE-80	Tape Top/End LED	13-52
	LE-86	Tension Regulator LED	13-52
	KY-219	Function Key/LED/Switch	13-48
	DP-165	Counter Display	13-48
	SE-151	Tape End Sensor	13-50
	SE-152	Tape Top Sensor	13-52
	SE-159	Tension Regulator CDS Detect	13-52
	HN-160	Connection	13-52
POWER	AC-136	AC Input	13-54
	DC-53A	AC-DC Power Regulator	13-54
CONNECTOR	CP-183 (inc. DUS-442)	Connection of Rear Connector	13-56 (13-56)
	CN-633	Connection of Front Connector	13-56

* : S/N 10031 and higher

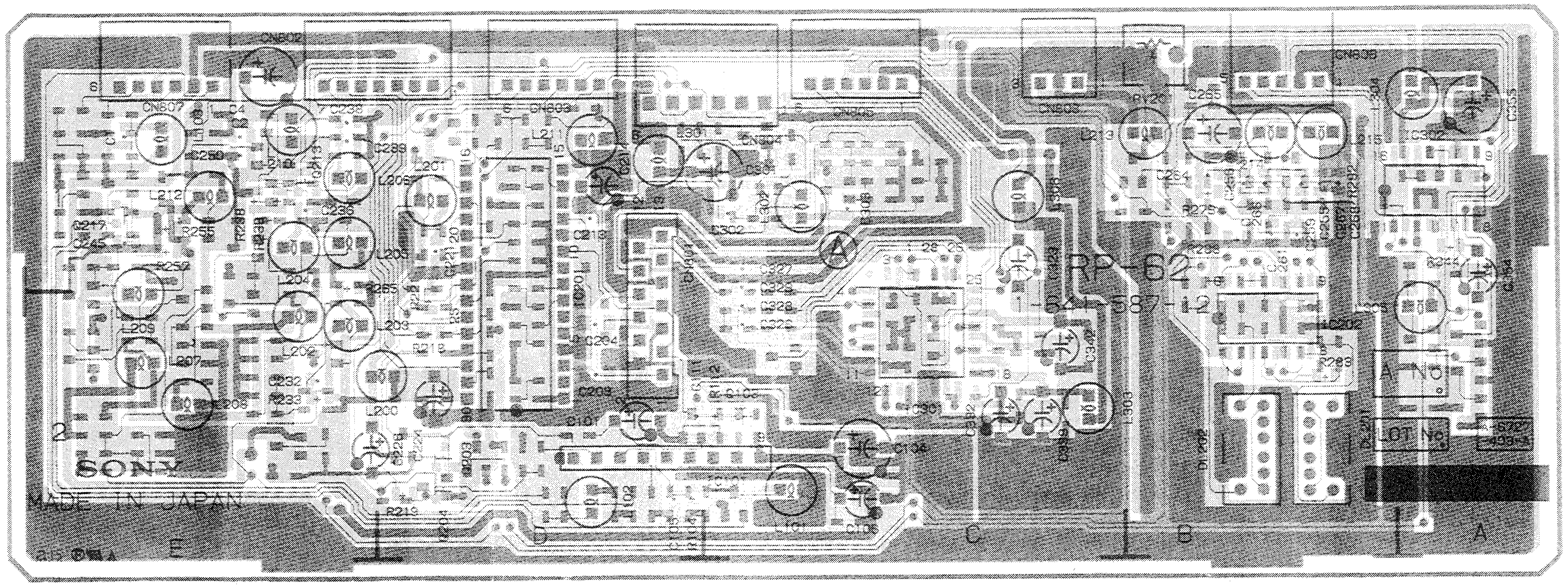
Note: The mentioned items at waveform photograph of this section are measurement point, board location, and machine operation mode.

RP-62A ; VIDEO & AFM HEAD AMP

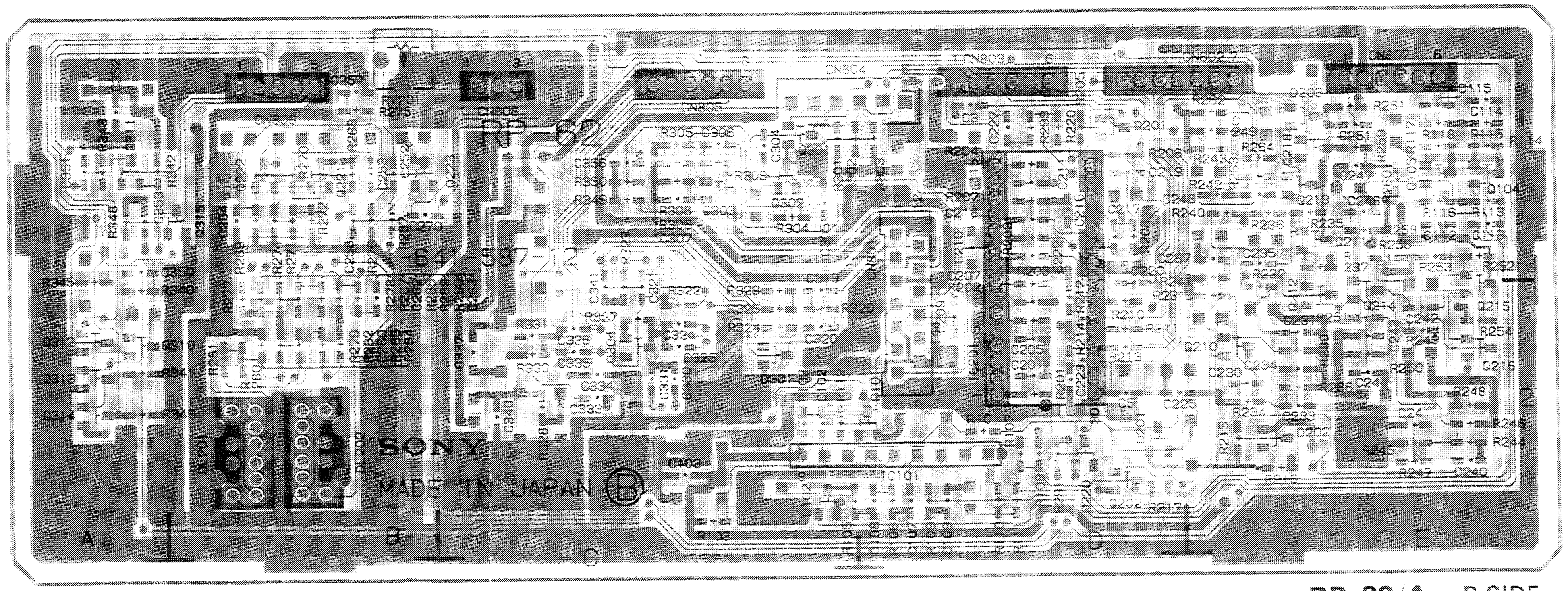
RP-62A (1-641-587-12)

CN801	D-1
CN802	E-1
CN803	D-1
CN804	C-1
CN805	C-1
CN806	B-1
CN807	E-1
CN808	C-1
DL201	B-2
DL202	B-2
D201	D-1 *
D202	E-2 *
D203	E-1 *
D301	C-2 *
IC101	C-2
IC201	D-2
IC202	B-2
IC301	C-2
IC302	A-1
Q101	D-2 *
Q102	C-2 *
Q103	C-2
Q104	E-1 *
Q105	E-1 *
Q201	D-2 *
Q202	D-2 *
Q203	D-2
Q204	D-2
Q210	E-2 *
Q211	E-1 *
Q212	E-2 *
Q213	E-1
Q214	E-2 *
Q215	D-1 *
Q216	D-2 *
Q217	E-1
Q218	E-1 *
Q219	E-1 *
Q220	D-2 *
Q221	B-1 *
Q222	B-1 *
Q223	C-1 *
Q301	C-1 *
Q302	C-1 *
Q303	C-1 *
Q304	C-2 *
Q310	B-2 *
Q311	A-1 *
Q312	A-2 *
Q313	A-2 *
Q314	A-2 *
Q315	B-1 *
RV201	B-1

* mark ; B SIDE mount


SONY
MADE IN JAPAN
RP-62
1-641-587-12
LOT No.
A
B
C
D
E

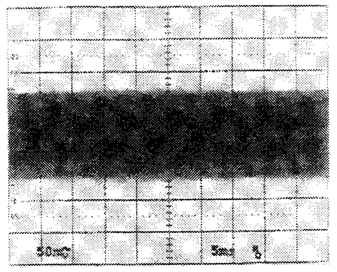
RP-62/A — A SIDE —
1-641-587-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


SONY
MADE IN JAPAN Ⓑ
RP-62
1-641-587-12
A
B
C
D
E

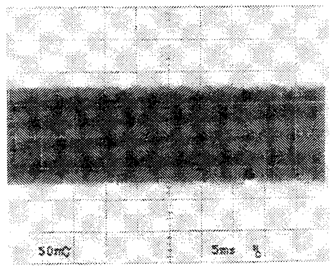
RP-62/A — B SIDE —
1-641-587-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

RP-62A ; VIDEO & AFM HEAD AMP

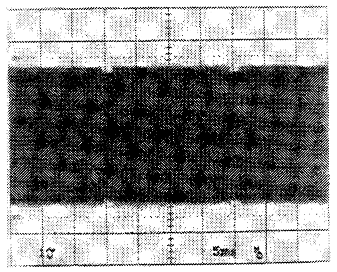
① CN804 pin 1 (C-1) REC mode



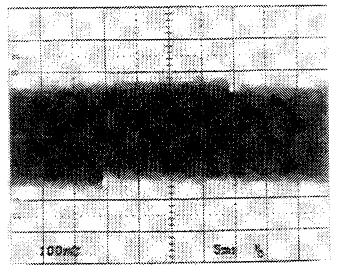
② CN804 pin 2 (C-1) PB mode (S)
CN804 pin 5 (C-1) (TRIG)



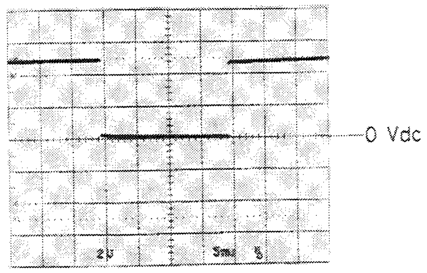
③ CN804 pin 3 (C-1) REC mode
CN804 pin 5 (C-1) (TRIG)



④ CN804 pin 4 (C-1) PB mode (N)
CN804 pin 5 (C-1) (TRIG)



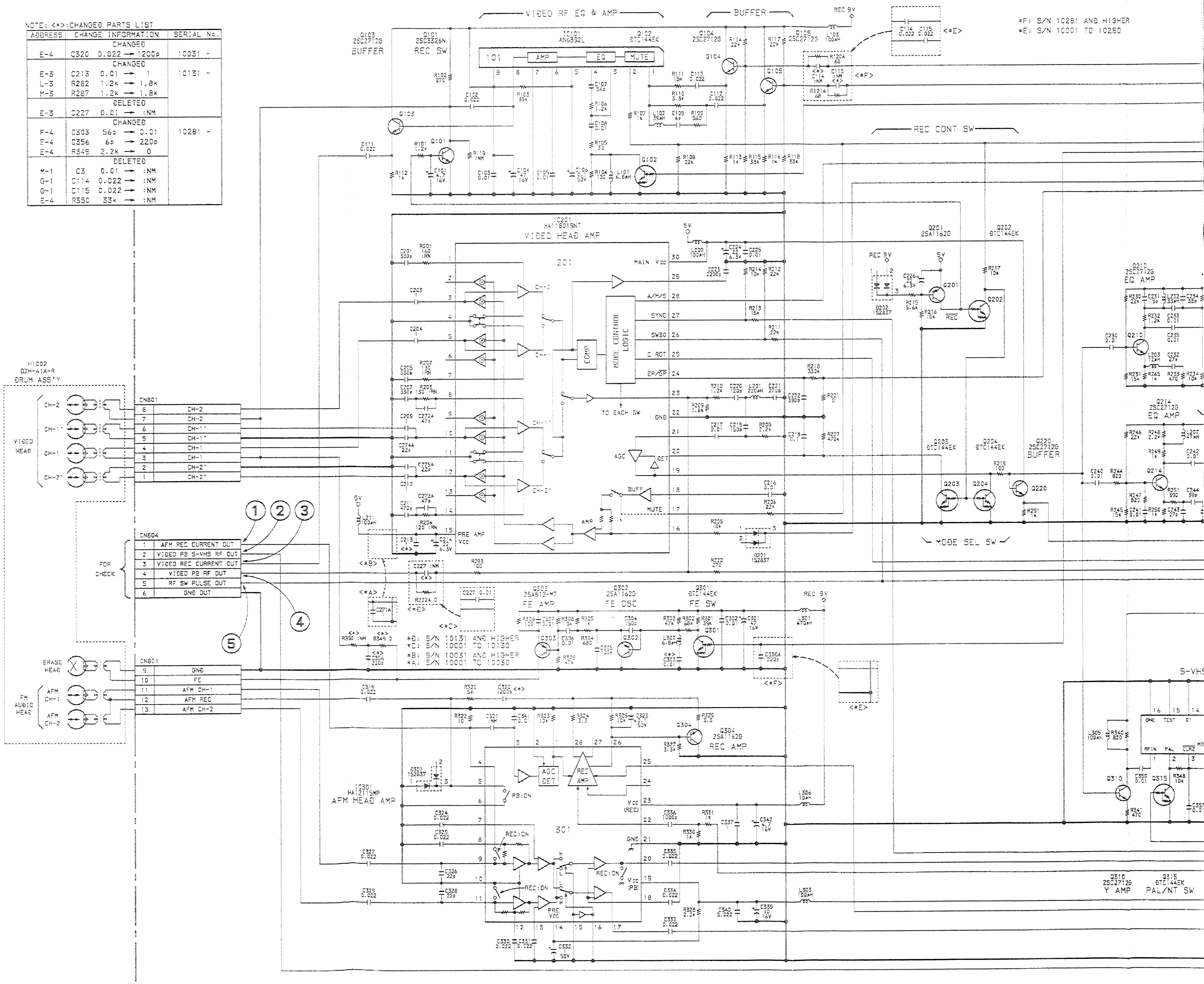
⑤ CN804 pin 5 (C-1) REC/PB mode



Measurement Condition
S-VIDEO IN : 75% color bars
REC mode : S-VHS
PB mode (S) : KRV-45HPS
PB mode (N) : KRV-45PS

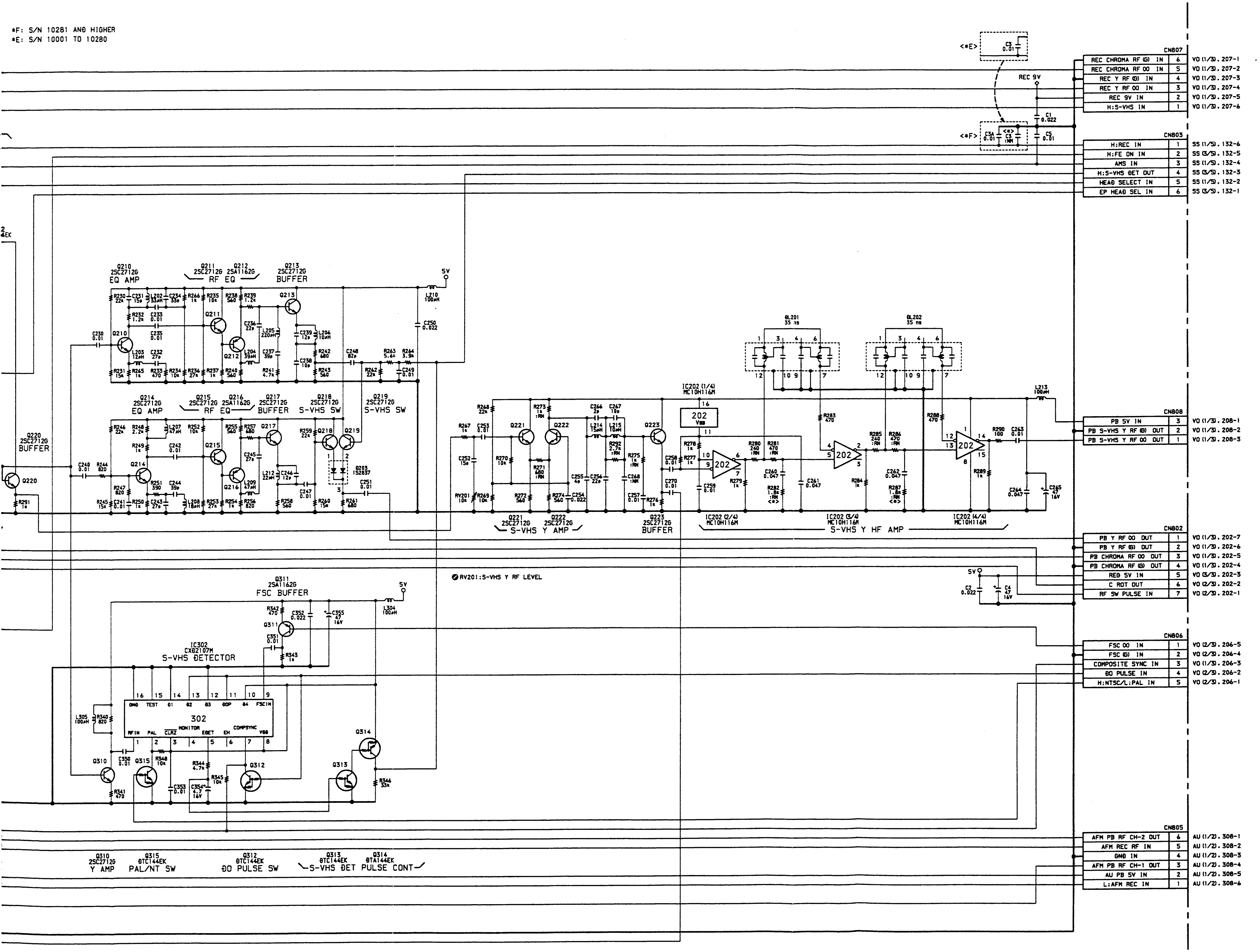
NOTE: <*>:CHANGED PARTS LIST

ADDRESS	CHANGE INFORMATION	SERIAL No.
	CHANGED	
E-4	C320 0.022 → 1200p	10031 ~
	CHANGED	
E-3	C213 0.01 → 1	10131 ~
L-3	R282 1.2k → 1.8k	
M-3	R287 1.2k → 1.8k	
	DELETED	
E-3	C227 0.01 → :NM	
	CHANGED	
F-4	C303 56p → 0.01	10281 ~
E-4	C356 6p → 220p	
E-4	R349 2.2k → 0	
	DELETED	
M-1	C3 0.01 → :NM	
G-1	C114 0.022 → :NM	
G-1	C115 0.022 → :NM	
E-4	R350 33k → :NM	


VIDEO RF EQ & AMP
BUFFER
REC 9V
Q103 2SC2712G BUFFER
Q101 2SC3326N REC SW
IC101 AN6352L
101
AMP
EQ
MUTE
Q102 DTC144EK
Q104 2SC2712G
Q105 2SC2712G
REC CONT SW
H1002
DZH-41A-R
DRUM ASS'Y
VIDEO HEAD
CH-2
CH-1'
CH-1
CH-2'
CN801
8 CH-2
7 CH-2
6 CH-1'
5 CH-1'
4 CH-1
3 CH-1
2 CH-2'
1 CH-2'
IC201 HA118015NT VIDEO HEAD AMP
201
MAIN Vcc
A/M/S
SYNC
SW30
C ROT
EP/SP
GND
AGC
DET
BUFF
MUTE
PRE AMP Vcc
COMP
MODE CONTROL LOGIC
TO EACH SW
Q201 2SA1162G
Q202 DTC144EK
Q203 DTC144EK
Q204 DTC144EK
Q220 2SC2712G BUFFER
MODE SEL SW
Q210 2SC2712G EQ AMP
Q214 2SC2712G EQ AMP
CN804
1 AFM REC CURRENT OUT
2 VIDEO PB S-VHS RF OUT
3 VIDEO REC CURRENT OUT
4 VIDEO PB RF OUT
5 RF SW PULSE OUT
6 GND OUT
FOR CHECK
① ② ③ ④ ⑤
Q303 2SA812-M7 FE AMP
Q302 2SA1162G FE OSC
Q301 DTC144EK FE SW
ERASE HEAD
FM AUDIO HEAD
AFM CH-1
AFM CH-2
CN801
9 GND
10 FE
11 AFM CH-1
12 AFM REC
13 AFM CH-2
IC301 HA12115NP AFM HEAD AMP
301
AGC DET
REC AMP
PB:ON
REC:ON
PRE Vcc
Vcc (REC)
Vcc (PB)
Q304 2SA1162G REC AMP
Q310 2SC2712G Y AMP
Q315 DTC144EK PAL/NT SW
S-VHS

*F: S/N 10281 AND HIGHER
*E: S/N 10001 TO 10280

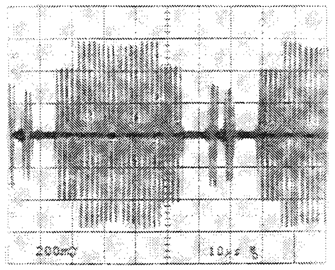
*D: S/N 10131 AND HIGHER
*C: S/N 10001 TO 10130
*B: S/N 10031 AND HIGHER
*A: S/N 10001 TO 10030


*F: S/N 10281 AND HIGHER
*E: S/N 10001 TO 10280
Q210 2SC2712G EQ AMP
Q211 2SC2712G Q212 2SA1162G RF EQ
Q213 2SC2712G BUFFER
Q214 2SC2712G EQ AMP
Q215 2SC2712G Q216 2SA1162G RF EQ
Q217 2SC2712G BUFFER
Q218 2SC2712G S-VHS SW
Q219 2SC2712G S-VHS SW
Q220 2SC2712G BUFFER
Q221 2SC2712G Q222 2SC2712G S-VHS Y AMP
Q223 2SC2712G BUFFER
IC202 (1/4) MC10H116M
IC202 (2/4) MC10H116M
IC202 (3/4) MC10H116M
IC202 (4/4) MC10H116M
S-VHS Y HF AMP
DL201 35 ns
DL202 35 ns
RV201: S-VHS Y RF LEVEL
Q311 2SA1162G FSC BUFFER
IC302 CXD2107M S-VHS DETECTOR
Q310 2SC2712G Y AMP
Q315 DTC144EK PAL/NT SW
Q312 DTC144EK DD PULSE SW
Q313 DTC144EK Q314 DTA144EK S-VHS DET PULSE CONT
5V
REC 9V
CN807
REC CHROMA RF (G) IN 6 VO (1/3). 207-1
REC CHROMA RF (X) IN 5 VO (1/3). 207-2
REC Y RF (G) IN 4 VO (1/3). 207-3
REC Y RF (X) IN 3 VO (1/3). 207-4
REC 9V IN 2 VO (1/3). 207-5
H:S-VHS IN 1 VO (1/3). 207-6
CN803
H:REC IN 1 SS (1/5). 132-6
H:FE ON IN 2 SS (3/5). 132-5
AMS IN 3 SS (1/5). 132-4
H:S-VHS DET OUT 4 SS (3/5). 132-3
HEAD SELECT IN 5 SS (1/5). 132-2
EP HEAD SEL IN 6 SS (3/5). 132-1
CN808
PB 5V IN 3 VO (1/3). 208-1
PB S-VHS Y RF (G) OUT 2 VO (1/3). 208-2
PB S-VHS Y RF (X) OUT 1 VO (1/3). 208-3
CN802
PB Y RF (X) OUT 1 VO (1/3). 202-7
PB Y RF (G) OUT 2 VO (1/3). 202-6
PB CHROMA RF (X) OUT 3 VO (1/3). 202-5
PB CHROMA RF (G) OUT 4 VO (1/3). 202-4
REG 5V IN 5 VO (3/3). 202-3
C ROT OUT 6 VO (2/3). 202-2
RF SW PULSE IN 7 VO (2/3). 202-1
CN806
FSC (X) IN 1 VO (2/3). 206-5
FSC (G) IN 2 VO (2/3). 206-4
COMPOSITE SYNC IN 3 VO (1/3). 206-3
DD PULSE IN 4 VO (2/3). 206-2
H:NTSC/L:PAL IN 5 VO (2/3). 206-1
CN805
AFM PB RF CH-2 OUT 6 AU (1/2). 308-1
AFM REC RF IN 5 AU (1/2). 308-2
GND IN 4 AU (1/2). 308-3
AFM PB RF CH-1 OUT 3 AU (1/2). 308-4
AU PB 5V IN 2 AU (1/2). 308-5
L:AFM REC IN 1 AU (1/2). 308-6

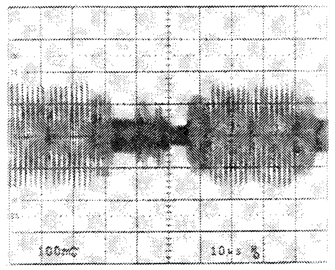
RP-62A
1-641-587-12 (1)
SVO-9500MDP

CR-39 (1/3); CHROMA PROCESS & CHROMA OUTPUT

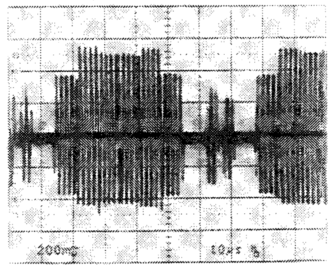
① TP607 (E-3＊) STOP (E-E) mode



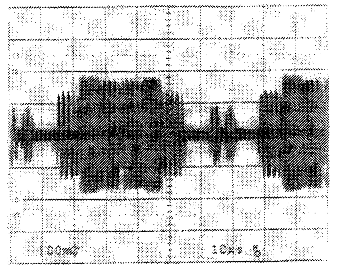
TP607 (E-3＊) PB mode



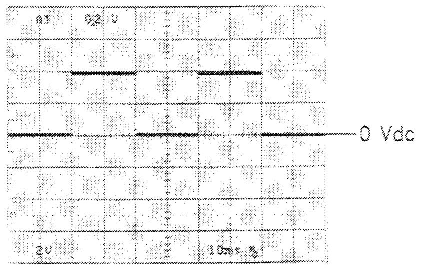
② TP601 (F-3＊) STOP (E-E) mode



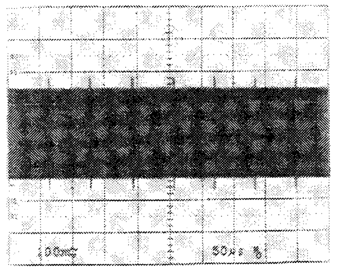
TP601 (F-3＊) PB mode



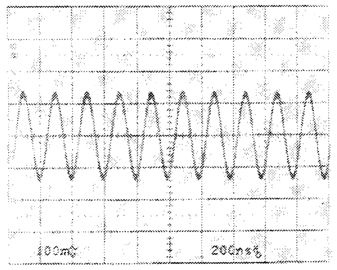
③ TP610 (G-3＊) REC/PB mode



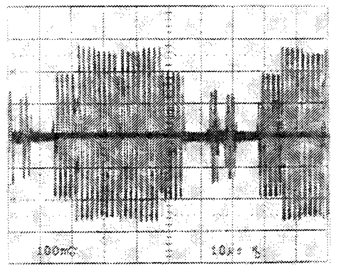
④ TP608 (D-3＊)



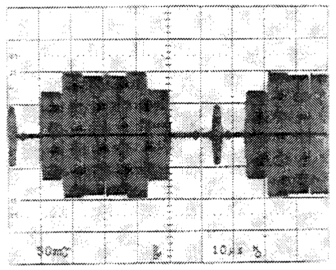
TP608 (D-3＊) (fsc part)



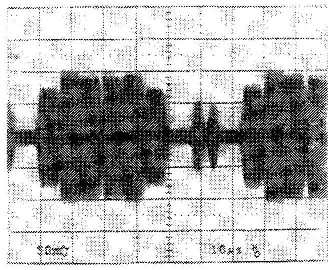
⑤ TP603 (G-3＊) STOP (E-E) mode



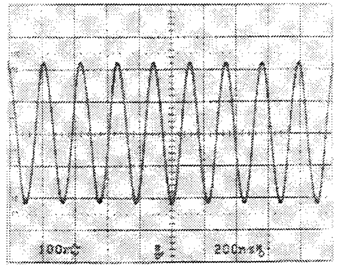
⑥ TP605 (F-3＊) STOP (E-E) mode



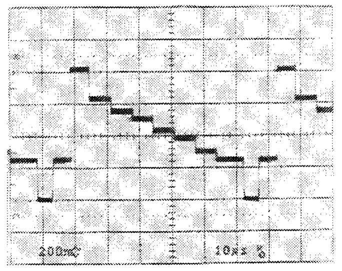
TP605 (F-3＊) PB mode



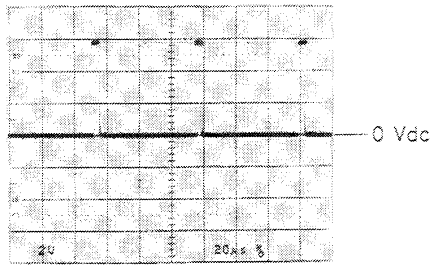
⑦ TP602 (F-2＊)



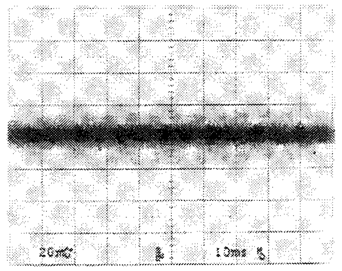
⑧ CN212 pin 18 (H-2＊)
STOP (E-E) mode



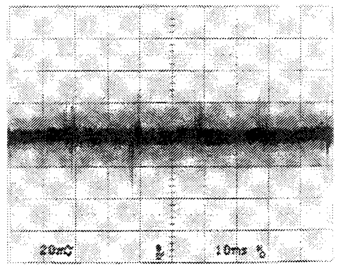
⑨ IC604 pin 4 (A-2＊)



⑩ TP606 (E-2＊) STOP (E-E) mode



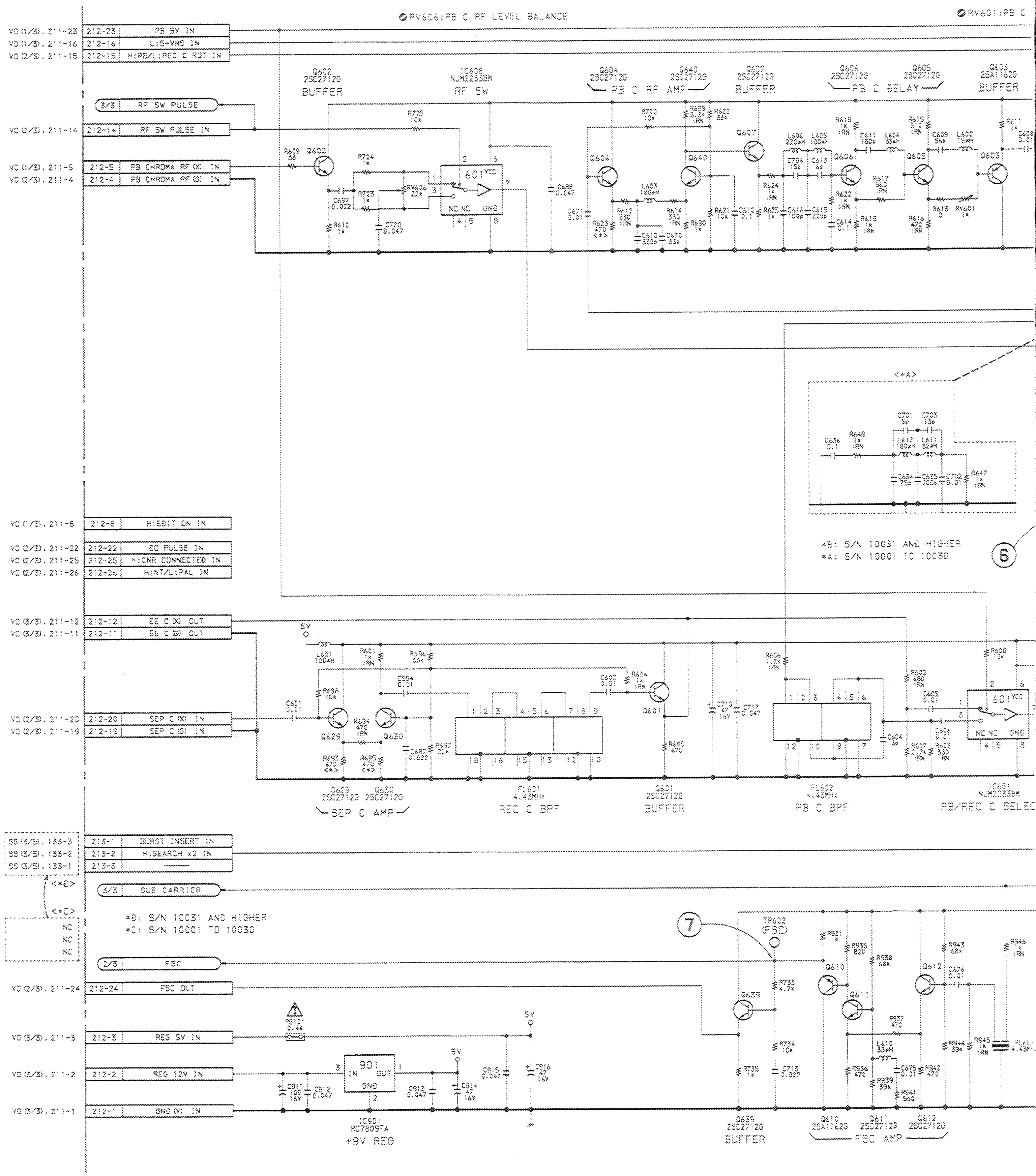
TP606 (E-2＊) PB mode

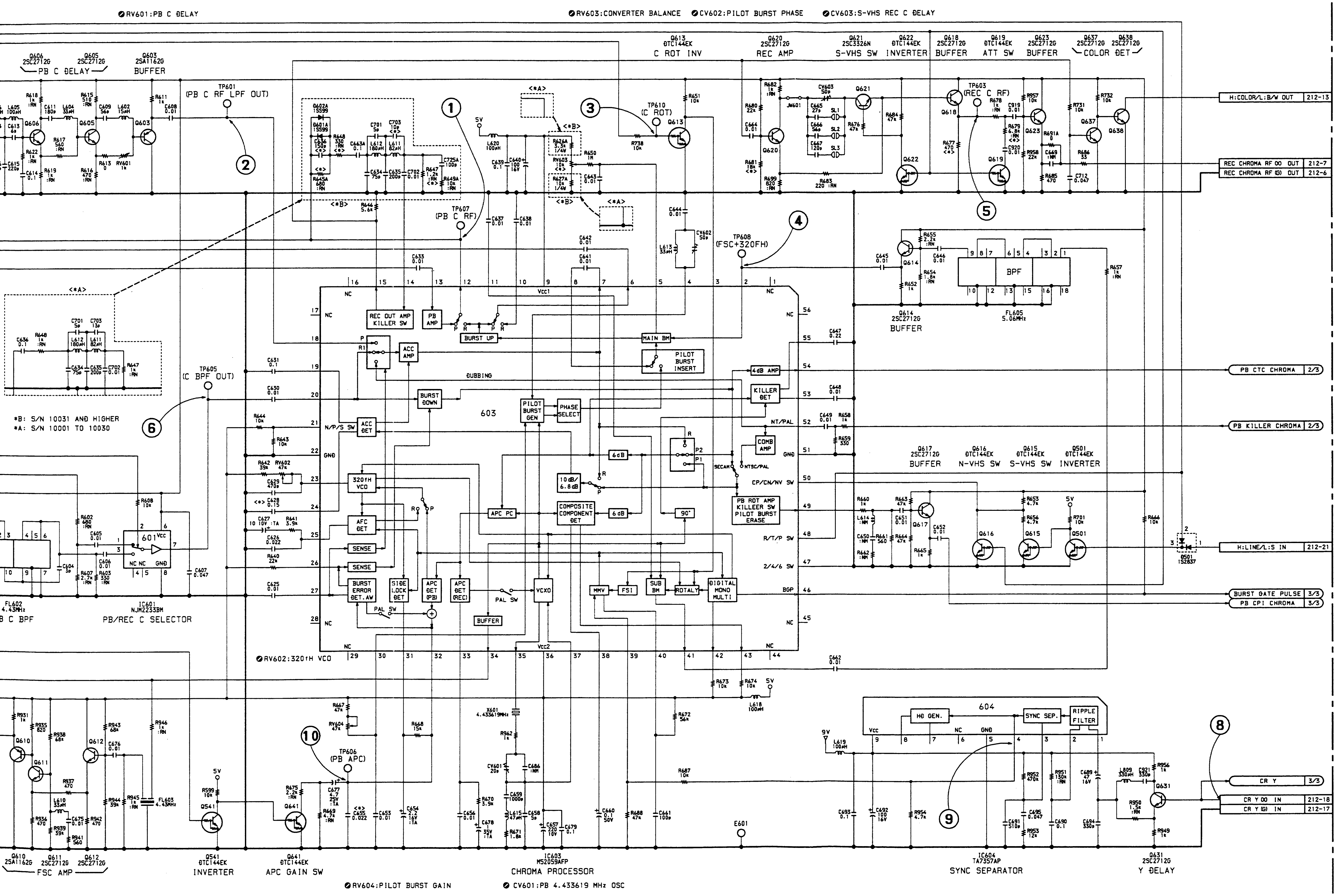


Measurement Condition
S-VIDEO IN: 75% color bars
STOP (E-E) mode: S-VHS
REC mode: S-VHS
PB mode: KRV-45HPS

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.

＊ mark; B SIDE mount


RV606:PB C RF LEVEL BALANCE
RV601:PB C
VO (1/3), 211-23 212-23 PB 5V IN
VO (1/3), 211-16 212-16 L:S-VHS IN
VO (2/3), 211-15 212-15 H:PB/L:REC C ROT IN
3/3 RF SW PULSE
VO (2/3), 211-14 212-14 RF SW PULSE IN
VO (1/3), 211-5 212-5 PB CHROMA RF (X) IN
VO (2/3), 211-4 212-4 PB CHROMA RF (G) IN
Q602 2SC2712G BUFFER
IC608 NJM2233BM RF SW
Q604 2SC2712G
Q640 2SC2712G
PB C RF AMP
Q607 2SC2712G BUFFER
Q606 2SC2712G
Q605 2SC2712G
PB C DELAY
Q603 2SA1162G BUFFER
<＊A>
＊B: S/N 10031 AND HIGHER
＊A: S/N 10001 TO 10030
⑥
VO (1/3), 211-8 212-8 H:EDIT ON IN
VO (2/3), 211-22 212-22 SC PULSE IN
VO (2/3), 211-25 212-25 H:CNR CONNECTED IN
VO (2/3), 211-26 212-26 H:NT/L:PAL IN
VO (3/3), 211-12 212-12 EE C (X) OUT
VO (3/3), 211-11 212-11 EE C (G) OUT
VO (2/3), 211-20 212-20 SEP C (X) IN
VO (2/3), 211-19 212-19 SEP C (G) IN
5V
Q629 2SC2712G Q630 2SC2712G SEP C AMP
FL601 4.43MHz REC C BPF
Q601 2SC2712G BUFFER
FL602 4.43MHz PB C BPF
IC601 NJM2233BM PB/REC C SELEC
SS (3/5), 133-3 213-1 BURST INSERT IN
SS (3/5), 133-2 213-2 H:SEARCH ×2 IN
SS (3/5), 133-1 213-3
<＊D>
<＊C>
NC
NC
NC
3/3 SUB CARRIER
＊D: S/N 10031 AND HIGHER
＊C: S/N 10001 TO 10030
2/3 FSC
VO (2/3), 211-24 212-24 FSC OUT
⑦
TP602 (FSC)
PS101 0.4A
VO (3/3), 211-3 212-3 REG 5V IN
VO (3/3), 211-2 212-2 REG 12V IN
VO (3/3), 211-1 212-1 GND (V) IN
901 IN OUT GND
IC901 RC7809FA +9V REG
9V
Q635 2SC2712G BUFFER
Q610 2SA1162G Q611 2SC2712G Q612 2SC2712G FSC AMP


RV601:PB C DELAY
RV603:CONVERTER BALANCE
CV602:PILOT BURST PHASE
CV603:S-VHS REC C DELAY
Q606 2SC2712G
Q605 2SC2712G
PB C DELAY
Q603 2SA1162G
BUFFER
TP601 (PB C RF LPF OUT)
Q613 DTC144EK
C ROT INV
Q620 2SC2712G
REC AMP
Q621 2SC3326N
S-VHS SW
Q622 DTC144EK
INVERTER
Q618 2SC2712G
BUFFER
Q619 DTC144EK
ATT SW
Q623 2SC2712G
BUFFER
Q637 2SC2712G
Q638 2SC2712G
COLOR DET
TP610 (C ROT)
TP603 (REC C RF)
TP607 (PB C RF)
TP608 (FSC+320FH)
TP605 (C BPF OUT)
TP606 (PB APC)
H:COLOR/L:B/W OUT
212-13
VO (2/3). 211-13
REC CHROMA RF (X) OUT
212-7
VO (1/3). 211-7
REC CHROMA RF (G) OUT
212-6
VO (1/3). 211-6
Q614 2SC2712G
BUFFER
BPF
FL605 5.06MHz
*B: S/N 10031 AND HIGHER
*A: S/N 10001 TO 10030
REC OUT AMP KILLER SW
PB AMP
BURST UP
MAIN BM
PILOT BURST INSERT
ACC AMP
4dB AMP
KILLER DET
COMB AMP
BURST DOWN
DUBBING
603
PILOT BURST GEN
PHASE SELECT
ACC DET
6dB
320fH VCO
10dB/6.8dB
AFC DET
APC PC
COMPOSITE COMPONENT DET
90°
PB ROT AMP KILLEER SW PILOT BURST ERASE
SENSE
BURST ERROR DET.AW
SIDE LOCK DET
APC DET (PB)
APC DET (REC)
VCXO
MMV
FSI
SUB BM
ROTALY
DIGITAL MONO MULTI
BUFFER
PAL SW
N/P/S SW
NTSC/PAL
SECAM
CP/CN/NV SW
R/T/P SW
2/4/6 SW
BGP
NC
GND
Vcc1
Vcc2
PB CTC CHROMA 2/3
PB KILLER CHROMA 2/3
Q617 2SC2712G
BUFFER
Q616 DTC144EK
N-VHS SW
Q615 DTC144EK
S-VHS SW
Q501 DTC144EK
INVERTER
H:LINE/L:S IN
212-21
VO (2/3). 211-21
D501 1SS357
BURST GATE PULSE 3/3
PB CPI CHROMA 3/3
601
FL602 4.43MHz
B C BPF
IC601 NJM2233BM
PB/REC C SELECTOR
RV602:320fH VCO
604
HD GEN.
SYNC SEP.
RIPPLE FILTER
CR Y 3/3
CR Y (X) IN
212-18
VO (2/3). 211-18
CR Y (G) IN
212-17
VO (2/3). 211-17
Q610 2SA1162G
Q611 2SC2712G
Q612 2SC2712G
FSC AMP
Q541 DTC144EK
INVERTER
Q641 DTC144EK
APC GAIN SW
IC603 M52059AFP
CHROMA PROCESSOR
IC604 TA7357AP
SYNC SEPARATOR
Q631 2SC2712G
Y DELAY
X601 4.433619MHz
E601
RV604:PILOT BURST GAIN
CV601:PB 4.433619 MHz OSC
①
②
③
④
⑤
⑥
⑧
⑨
⑩

NOTE: <*>:CHANGED PARTS LIST

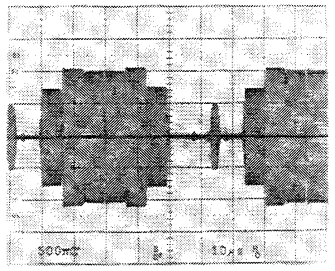
ADDRESS	CHANGE INFORMATION	SERIAL No.
	CHANGED	
J-1	C636 0.1 → 150p	10031 -
J-1	C703 13p → 10p	
G-2	R623 1k → 470	
J-2	R647 1k → 1.2k	
J-1	R648 1k → 680	
M-2	R677 1k → 470	
M-1	R679 3.3k → 6.8k	
L-2	R681 22k → 18k	
F-4	R693 1k → 470	
F-4	R695 1k → 470	
K-2	RV603 22k → 10k	
	CHANGED	
I-3	C628 0.1 → 0.15	10281 -
J-5	C655 0.01 → 0.022	
	CHANGED	
J-1	R645A 330 → 680	10481 -
J-1	R648 680 → 330	

CR-39 (1/3)

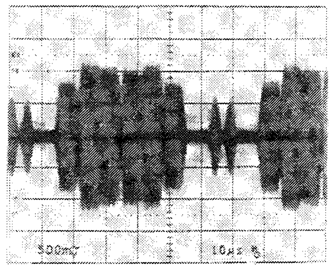
1-643-738-11 (1)
SVO-9500MDP

CR-39 (2/3); PB CROSSTALK CANCELER

① TP501 (B-3*) STOP (E-E) mode
TP502 (B-2*) STOP (E-E) mode

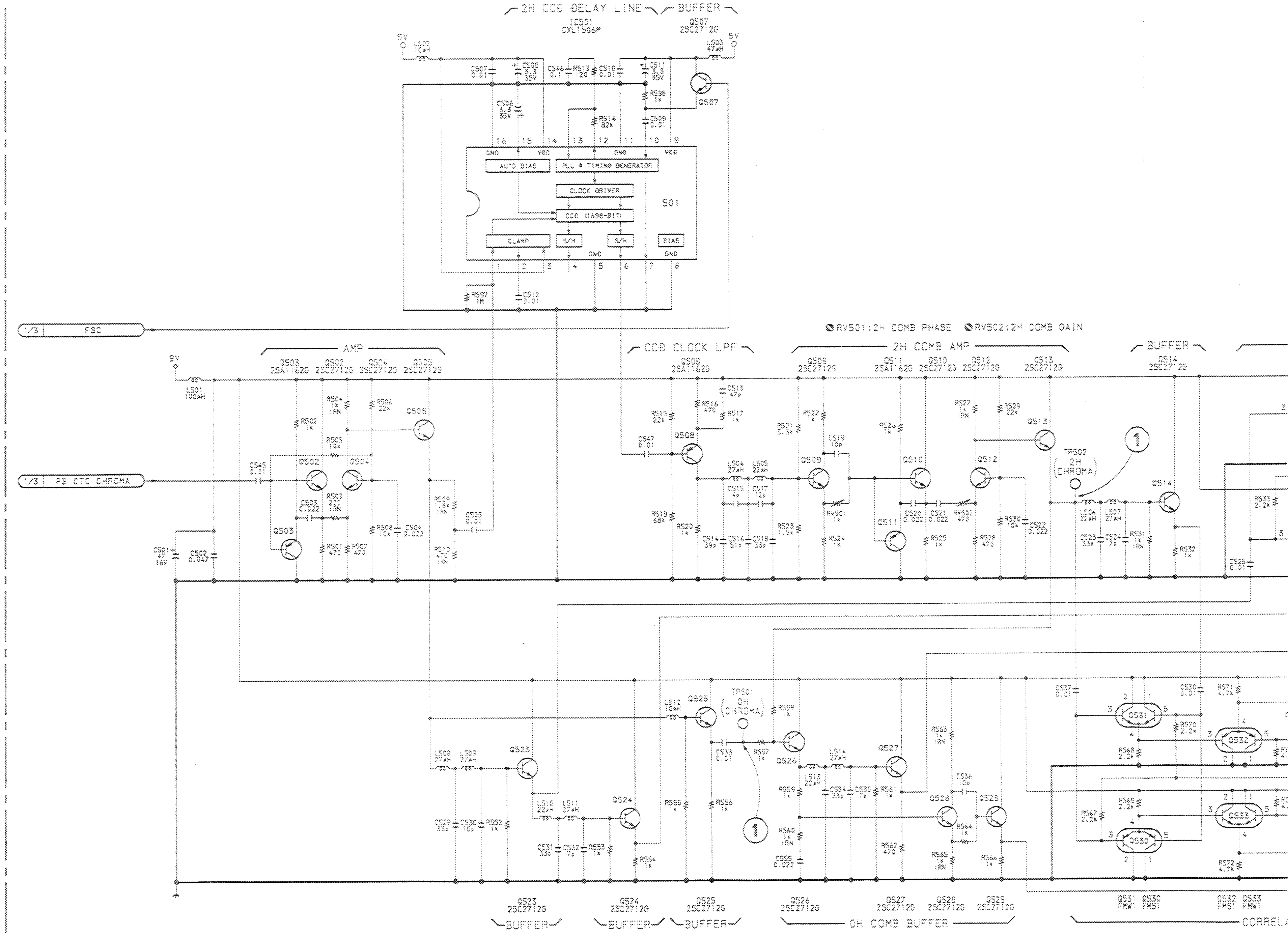


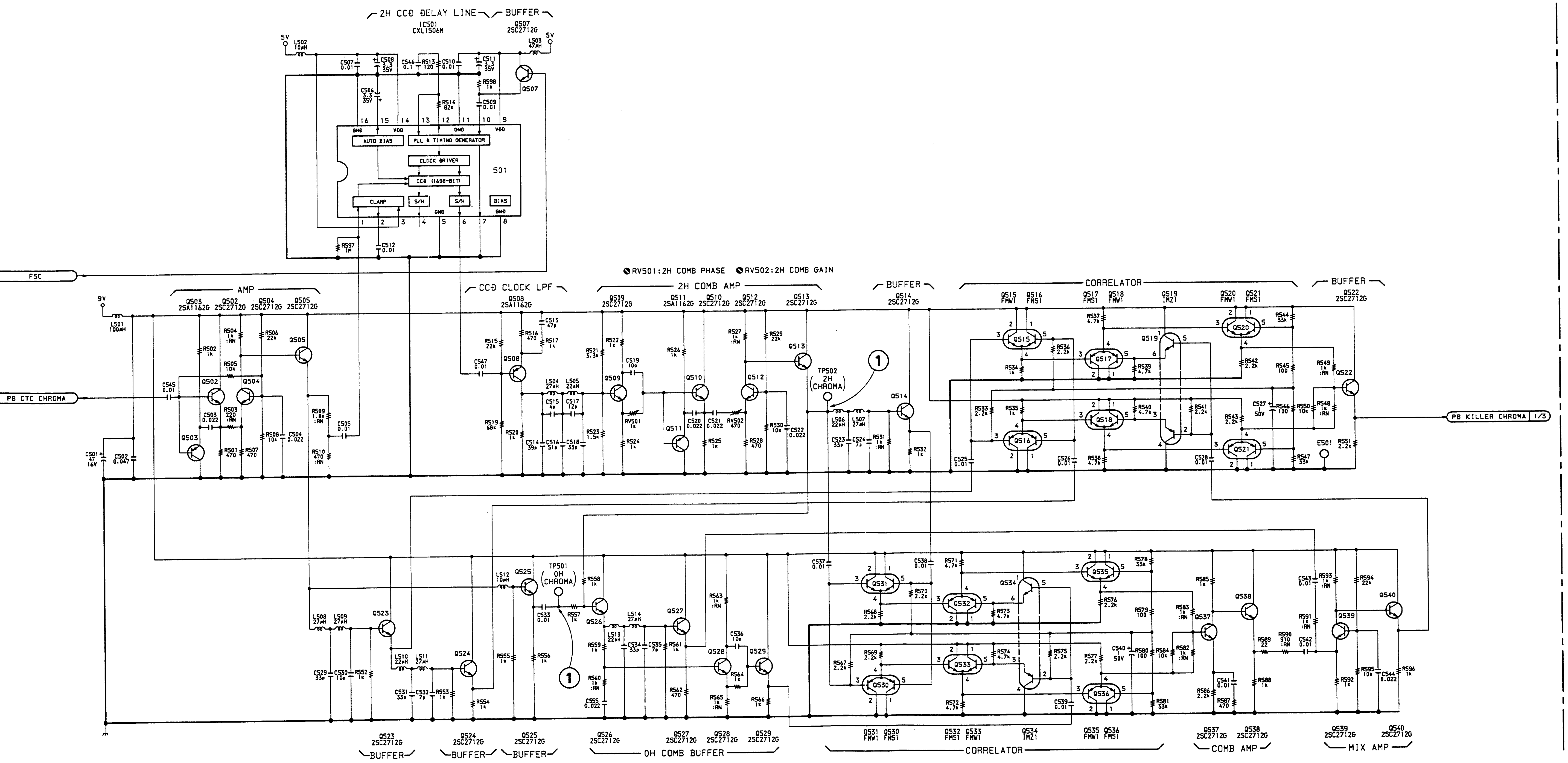
TP501 (B-3*) PB mode
TP502 (B-2*) PB mode



Measurement Condition
S-VIDEO IN: 75% color bars
STOP (E-E) mode: S-VHS
PB mode: KRV-45HPS

* mark: B SIDE mount


2H CCD DELAY LINE
IC501
CXL1506M
BUFFER
Q507
2SC2712G
5V
L502 10μH
L503 47μH
C507 0.01
C508 3.3 35V
C546 0.1
R513 120
C510 0.01
C511 3.3 35V
R598 1k
Q507
C506 3.3 35V
R514 82k
C509 0.01
GND
VDD
AUTO BIAS
PLL & TIMING GENERATOR
CLOCK DRIVER
CCD (1698-BIT)
CLAMP
S/H
S/H
BIAS
501
R597 1M
C512 0.01
1/3 FSC
1/3 PB CTC CHROMA
◎RV501:2H COMB PHASE ◎RV502:2H COMB GAIN
AMP
Q503 2SA1162G
Q502 2SC2712G
Q504 2SC2712G
Q505 2SC2712G
CCD CLOCK LPF
Q508 2SA1162G
2H COMB AMP
Q509 2SC2712G
Q511 2SA1162G
Q510 2SC2712G
Q512 2SC2712G
Q513 2SC2712G
BUFFER
Q514 2SC2712G
9V
L501 100μH
TP502 (2H CHROMA)
TP501 (0H CHROMA)
①
①
Q523 2SC2712G
Q524 2SC2712G
Q525 2SC2712G
BUFFER
BUFFER
BUFFER
Q526 2SC2712G
Q527 2SC2712G
Q528 2SC2712G
Q529 2SC2712G
0H COMB BUFFER
Q531 FMW1
Q530 FMS1
Q532 FMS1
Q533 FMW1
CORRELA

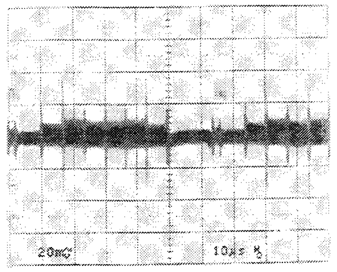

2H CCD DELAY LINE
IC501 CXL1506M
BUFFER
Q507 2SC2712G
5V
S01
AUTO BIAS
PLL & TIMING GENERATOR
CLOCK DRIVER
CCD (1698-BIT)
CLAMP
S/H
BIAS
FSC
9V
AMP
Q503 2SA1162G
Q502 2SC2712G
Q504 2SC2712G
Q505 2SC2712G
PB CTC CHROMA
CCD CLOCK LPF
Q508 2SA1162G
RV501:2H COMB PHASE
RV502:2H COMB GAIN
2H COMB AMP
Q509 2SC2712G
Q511 2SA1162G
Q510 2SC2712G
Q512 2SC2712G
Q513 2SC2712G
TP502 2H (CHROMA)
①
BUFFER
Q514 2SC2712G
CORRELATOR
Q515 FMW1
Q516 FMS1
Q517 FMS1
Q518 FMW1
Q519 IMZ1
Q520 FMW1
Q521 FMS1
BUFFER
Q522 2SC2712G
PB KILLER CHROMA 1/3
E501
TP501 0H (CHROMA)
Q523 2SC2712G BUFFER
Q524 2SC2712G BUFFER
Q525 2SC2712G BUFFER
Q526 2SC2712G
Q527 2SC2712G
Q528 2SC2712G
Q529 2SC2712G
0H COMB BUFFER
Q531 FMW1
Q530 FMS1
Q532 FMS1
Q533 FMW1
Q534 IMZ1
Q535 FMW1
Q536 FMS1
CORRELATOR
Q537 2SC2712G
Q538 2SC2712G
COMB AMP
Q539 2SC2712G
Q540 2SC2712G
MIX AMP

CR-39 (2/3)

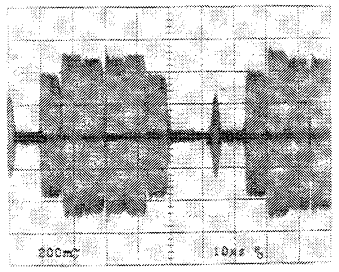
1-643-738-11 (1)
SVO-9500MDP

CR-39 (3/3) ; PB CHROMA OUTPUT

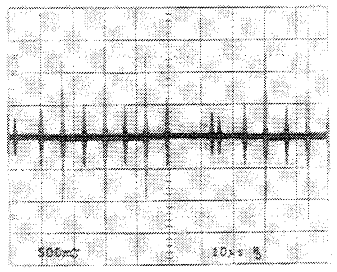
① TP801 (B-1＊) STOP (E-E) mode



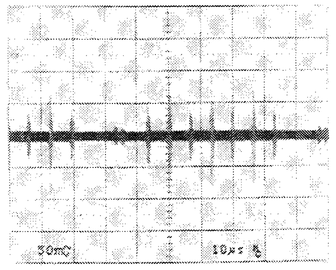
⑤ TP890 (E-1＊) PB mode



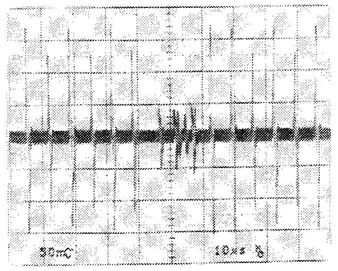
② TP820 (B-1＊) STOP (E-E) mode



③ TP870 (E-1＊) STOP (E-E) mode

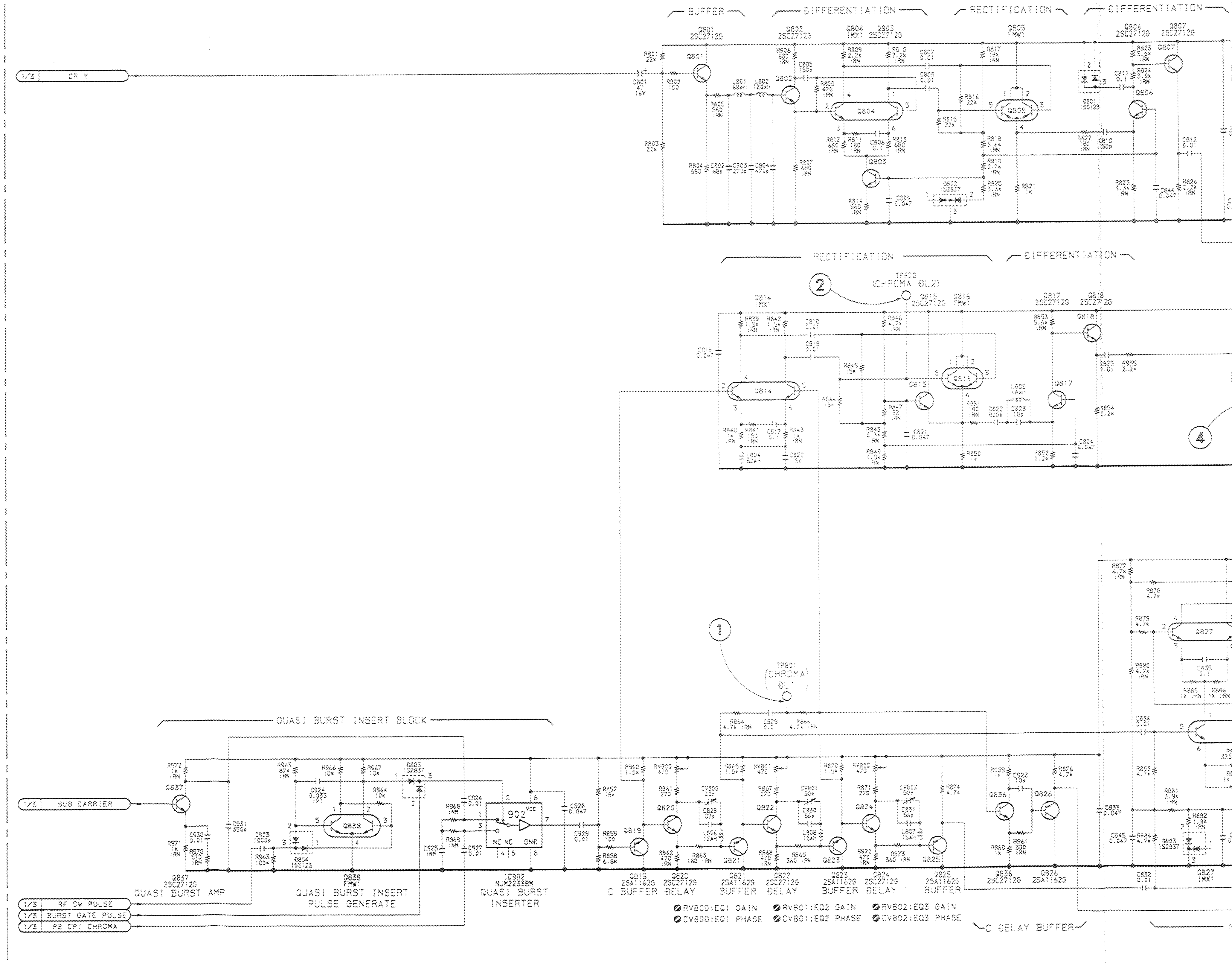


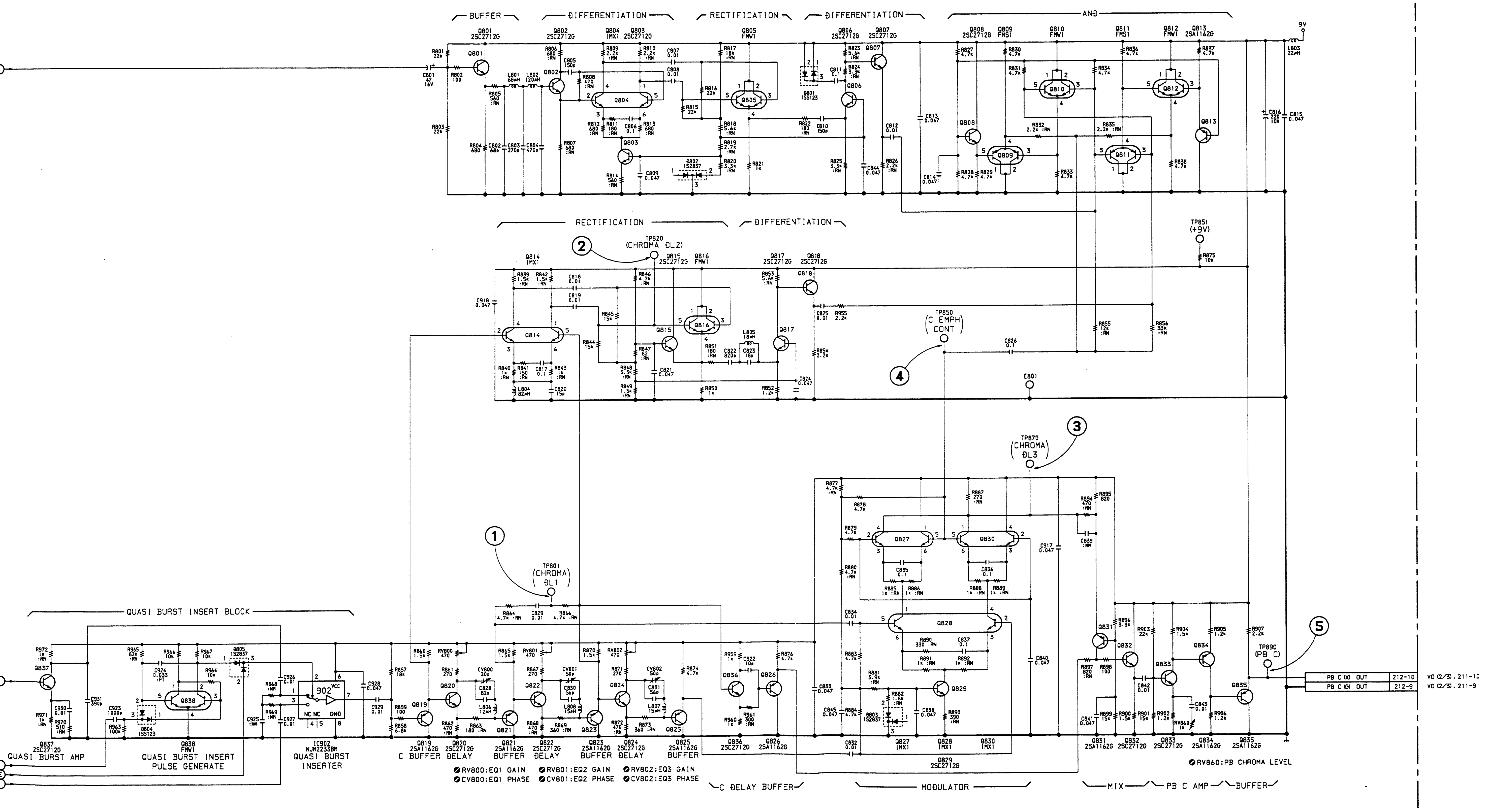
④ TP850 (E-1＊) STOP (E-E) mode



Measurement Condition
S-VIDEO IN : 75% color bars
STOP (E-E) mode : S-VHS
PB mode : KRV-45HPS

＊ mark ; B SIDE mount


BUFFER
DIFFERENTIATION
RECTIFICATION
DIFFERENTIATION
1/3 CR Y
Q801 2SC2712G
Q802 2SC2712G
Q804 IMX1
Q803 2SC2712G
Q805 FMW1
Q806 2SC2712G
Q807 2SC2712G
RECTIFICATION
DIFFERENTIATION
TP820 (CHROMA DL2)
Q814 IMX1
Q815 2SC2712G
Q816 FMW1
Q817 2SC2712G
Q818 2SC2712G
TP801 (CHROMA DL1)
QUASI BURST INSERT BLOCK
1/3 SUB CARRIER
1/3 RF SW PULSE
1/3 BURST GATE PULSE
1/3 PB CPI CHROMA
Q837 2SC2712G
QUASI BURST AMP
Q838 FMW1
QUASI BURST INSERT PULSE GENERATE
IC802 NJM2235BM
QUASI BURST INSERTER
Q819 2SA1162G
Q820 2SC2712G
C BUFFER DELAY
Q821 2SA1162G
Q822 2SC2712G
BUFFER DELAY
Q823 2SA1162G
Q824 2SC2712G
BUFFER DELAY
Q825 2SA1162G
BUFFER
Q836 2SC2712G
Q826 2SA1162G
C DELAY BUFFER
RV800:EQ1 GAIN
CV800:EQ1 PHASE
RV801:EQ2 GAIN
CV801:EQ2 PHASE
RV802:EQ3 GAIN
CV802:EQ3 PHASE
Q827 IMX1
1
2
4


BUFFER
DIFFERENTIATION
RECTIFICATION
DIFFERENTIATION
AND
Q801 2SC2712G
Q802 2SC2712G
Q804 IMX1
Q803 2SC2712G
Q805 FMW1
Q806 2SC2712G
Q807 2SC2712G
Q808 2SC2712G
Q809 FMS1
Q810 FMW1
Q811 FMS1
Q812 FMW1
Q813 2SA1162G
9V
RECTIFICATION
DIFFERENTIATION
TP820 (CHROMA DL2)
Q814 IMX1
Q815 2SC2712G
Q816 FMW1
Q817 2SC2712G
Q818 2SC2712G
TP851 (+9V)
TP850 (C EMPH CONT)
E801
TP870 (CHROMA DL3)
TP801 (CHROMA DL1)
QUASI BURST INSERT BLOCK
Q837 2SC2712G QUASI BURST AMP
Q838 FMW1 QUASI BURST INSERT PULSE GENERATE
IC902 NJM2233BM QUASI BURST INSERTER
Q819 2SA1162G C BUFFER
Q820 2SC2712G DELAY
Q821 2SA1162G BUFFER
Q822 2SC2712G DELAY
Q823 2SA1162G BUFFER
Q824 2SC2712G DELAY
Q825 2SA1162G BUFFER
Q836 2SC2712G
Q826 2SA1162G
Q827 IMX1
Q828 IMX1
Q829 2SC2712G
Q830 IMX1
Q831 2SA1162G
Q832 2SC2712G
Q833 2SC2712G
Q834 2SA1162G
Q835 2SA1162G
TP890 (PB C)
PB C (X) OUT 212-10 VO (2/3). 211-10
PB C (G) OUT 212-9 VO (2/3). 211-9
⊘RV800:EQ1 GAIN
⊘CV800:EQ1 PHASE
⊘RV801:EQ2 GAIN
⊘CV801:EQ2 PHASE
⊘RV802:EQ3 GAIN
⊘CV802:EQ3 PHASE
⊘RV860:PB CHROMA LEVEL
C DELAY BUFFER
MODULATOR
MIX
PB C AMP
BUFFER
①
②
③
④
⑤

CR-39 (3/3)

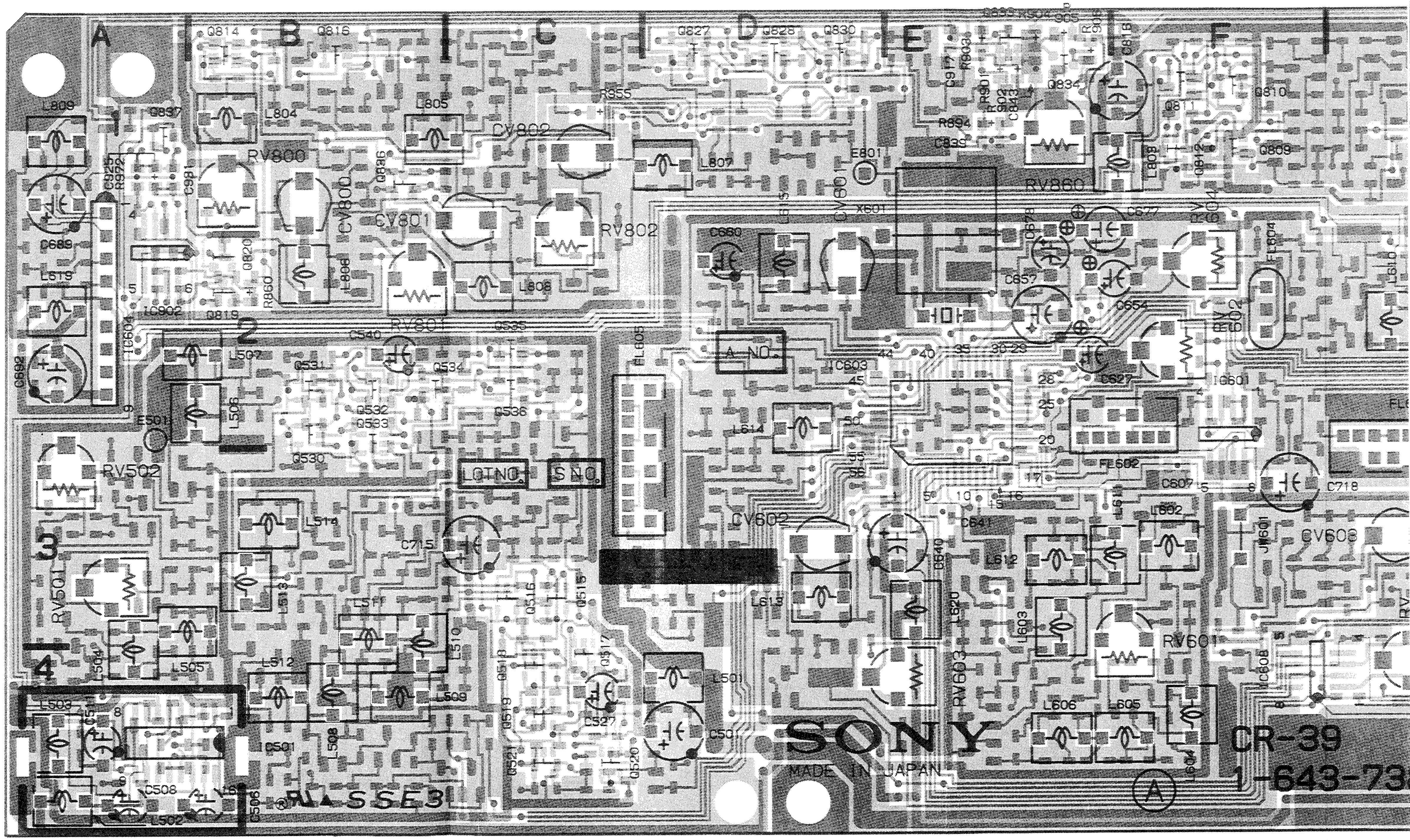
1-643-738-11 (1)
SVO-9500MDP

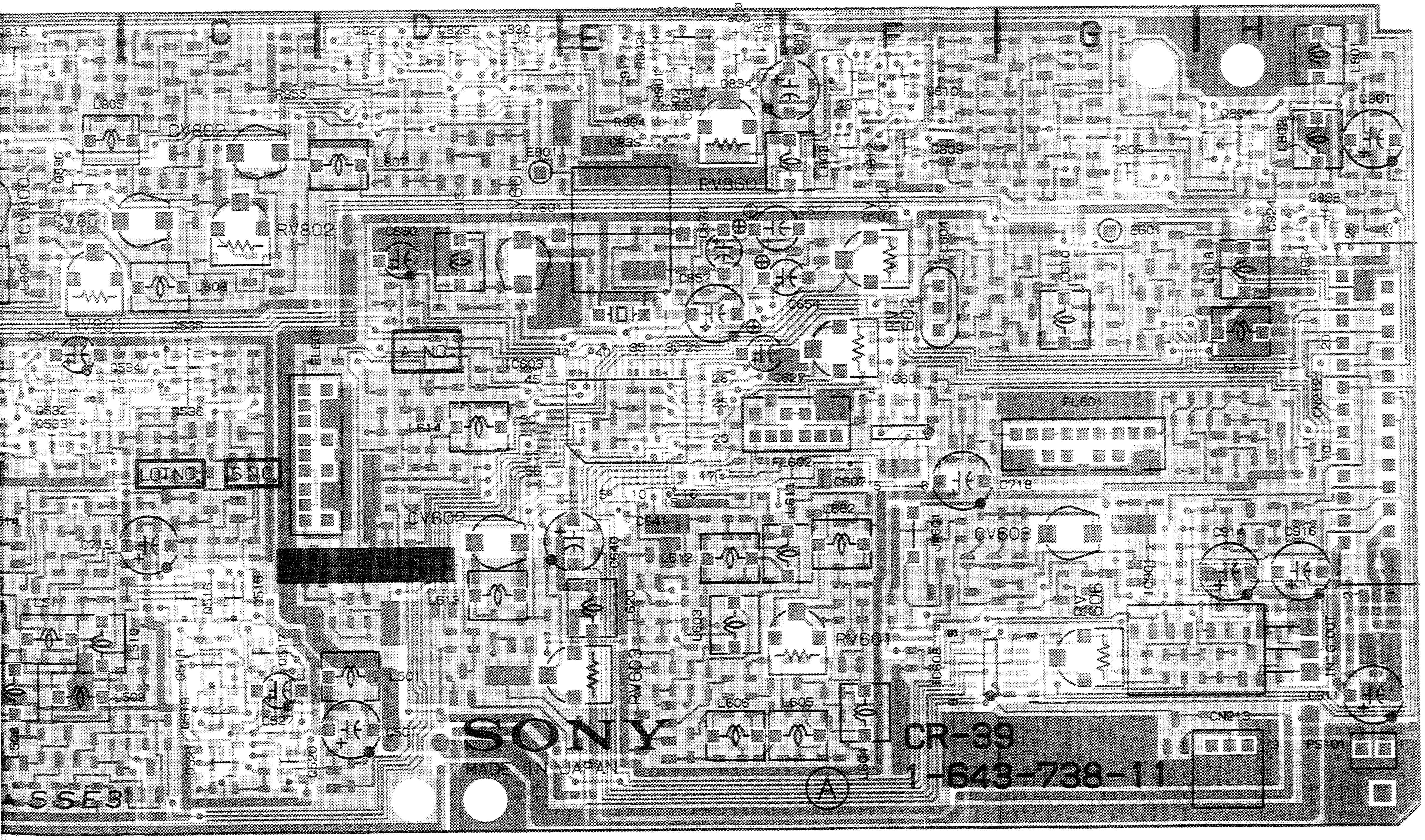
CR-39 ; CHROMA PROCESS

CR-39 (1-643-738-11)

CN212	H-2
CN213	H-4
CV601	D-1
CV602	D-3
CV603	F-3
CV800	B-1
CV801	B-1
CV802	C-1
D501	G-2 *
D801	G-1 *
D802	G-2 *
D803	D-1 *
D804	H-2 *
D805	B-2 *
E501	A-2
E601	G-2
E801	D-1
FL601	G-2
FL602	E-3
FL604	F-2
FL605	C-2
IC501	B-4
IC601	F-2
IC603	D-2
IC604	A-2
IC608	F-4
IC901	G-3
IC902	A-2
PS101	H-4
Q501	G-2 *
Q502	C-4 *
Q503	C-4 *
Q504	B-4 *
Q505	B-4 *
Q507	A-4 *
Q508	A-3 *
Q509	A-3 *
Q510	A-3 *
Q511	A-3 *
Q512	A-2 *
Q513	B-3 *
Q514	B-2 *
Q515	C-3
Q516	C-3
Q517	C-4
Q518	C-4
Q519	C-4
Q520	C-4
Q521	C-4
Q522	D-4 *
Q523	C-3 *
Q524	C-3 *
Q525	B-4 *
Q526	B-3 *
Q527	B-3 *
Q528	B-3 *
Q529	B-3 *
Q530	B-3
Q531	B-2
Q532	B-2
Q533	B-2
Q534	B-2
Q535	C-2
Q536	C-2
Q537	C-2 *
Q538	C-3 *
Q539	C-3 *
Q540	C-3 *
Q541	G-4 *
Q601	F-2 *
Q602	H-4 *
Q603	F-3 *
Q604	E-3 *
Q605	F-3 *
Q606	F-4 *
Q607	E-4 *
Q610	G-2 *
Q611	G-2 *
Q612	F-2 *
Q613	D-3 *
Q614	C-3 *
Q615	D-3 *
Q616	D-4 *
Q617	D-2 *
Q618	G-3 *
Q619	G-3 *
Q620	F-3 *
Q621	F-3 *
Q622	G-3 *
Q623	H-3 *
Q629	H-3 *
Q630	G-3 *
Q631	A-1 *
Q637	H-3 *
Q638	H-3 *
Q639	H-2 *
Q640	E-4 *
Q641	F-2 *
Q801	H-1 *
Q802	H-1 *
Q803	G-1 *
Q804	H-1
Q805	G-1
Q806	G-1 *
Q807	F-1 *
Q808	F-1 *
Q809	F-1
Q810	F-1
Q811	F-1
Q812	F-1
Q813	F-1 *
Q814	B-1
Q815	B-1 *
Q816	B-1
Q817	C-1 *
Q818	C-1 *
Q819	B-2
Q820	B-2
Q821	B-2 *
Q822	B-1 *
Q823	C-2 *
Q824	C-2 *
Q825	D-2 *
Q826	C-1 *
Q827	D-1
Q828	D-1
Q829	D-1 *
Q830	D-1
Q831	E-1 *
Q832	E-1 *
Q833	E-1
Q834	E-1
Q835	E-1 *
Q836	B-1
Q837	A-1
Q838	H-1
RV501	A-3
RV502	A-3
RV601	F-3
RV602	F-2
RV603	E-4
RV604	F-1
RV606	G-3
RV800	B-1
RV801	B-2
RV802	C-1
RV860	E-1
TP501	B-3 *
TP502	B-2 *
TP601	F-3 *
TP602	F-2 *
TP603	G-3 *
TP605	F-3 *
TP606	E-2 *
TP607	E-3 *
TP608	D-3 *
TP610	D-4 *
TP801	B-1 *
TP820	B-1 *
TP850	E-1 *
TP851	E-1 *
TP870	E-1 *
TP890	E-1 *
X601	D-1

* mark ; B SIDE mount


A
B
C
D
E
F
1
2
3
4
Q814
Q816
Q827
Q828
Q830
Q810
Q809
Q834
L809
L804
L805
L807
L808
L806
CV802
CV801
CV800
RV800
RV801
RV802
RV860
E801
X601
IC902
IC604
IC603
IC601
FL605
FL602
FL604
CV602
CV603
RV601
RV603
RV604
RV602
L507
L506
E501
RV502
RV501
L514
L513
L511
L512
L510
L509
L505
L504
L503
L502
L501
L508
C715
L614
L613
L612
L603
L606
L605
L604
LOT NO.
S NO.
A NO.
SONY
MADE IN JAPAN
CR-39
1-643-73


C
D
E
F
G
H
CV800
CV801
CV802
RV801
RV802
RV860
L805
L807
L808
E801
X601
E601
FL601
FL602
FL604
FL605
IC601
IC603
IC608
IC901
CN212
CN213
PS101
CV602
CV608
RV601
RV603
C715
C718
C914
C916
C801
L501
L509
L510
L511
L512
L513
L514
L601
L602
L603
L605
L606
A NO.
LOT NO.
S NO.
N.G OUT
SONY
MADE IN JAPAN
CR-39
1-643-738-11
A
SSE3

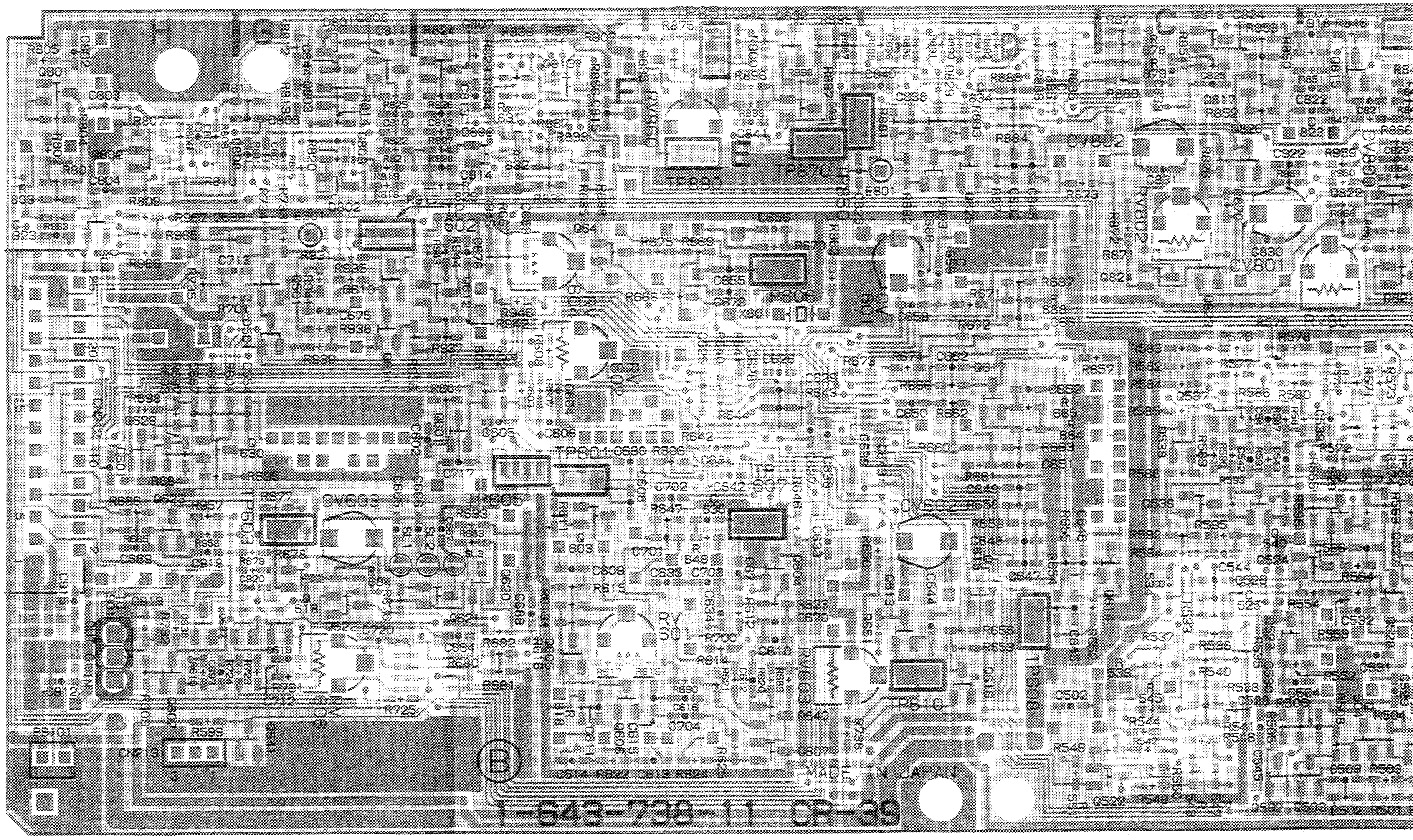
CR-39 — A SIDE —
1-643-738-11 (1)
SVO-9500MDP

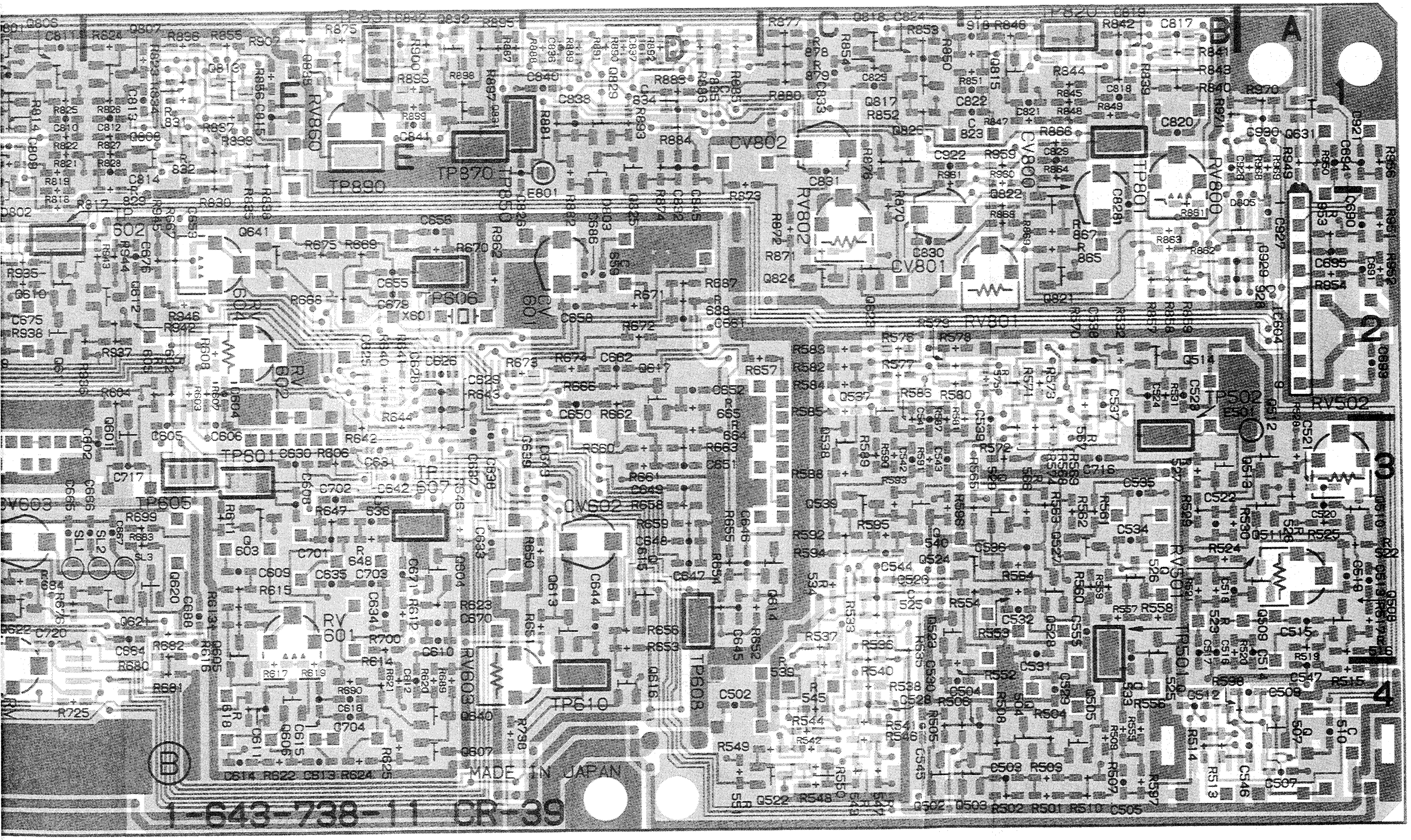
CR-39 ; CHROMA PROCESS

CR-39 (1-643-738-11)

CN212	H-2
CN213	H-4
CV601	D-1
CV602	D-3
CV603	F-3
CV800	B-1
CV801	B-1
CV802	C-1
D501	G-2 *
D801	G-1 *
D802	G-2 *
D803	D-1 *
D804	H-2 *
D805	B-2 *
E501	A-2
E601	G-2
E801	D-1
FL601	G-2
FL602	E-3
FL604	F-2
FL605	C-2
IC501	B-4
IC601	F-2
IC603	D-2
IC604	A-2
IC608	F-4
IC901	G-3
IC902	A-2
PS101	H-4
Q501	G-2 *
Q502	C-4 *
Q503	C-4 *
Q504	B-4 *
Q505	B-4 *
Q507	A-4 *
Q508	A-3 *
Q509	A-3 *
Q510	A-3 *
Q511	A-3 *
Q512	A-2 *
Q513	B-3 *
Q514	B-2 *
Q515	C-3
Q516	C-3
Q517	C-4
Q518	C-4
Q519	C-4
Q520	C-4
Q521	C-4
Q522	D-4 *
Q523	C-3 *
Q524	C-3 *
Q525	B-4 *
Q526	B-3 *
Q527	B-3 *
Q528	B-3 *
Q529	B-3 *
Q530	B-3
Q531	B-2
Q532	B-2
Q533	B-2
Q534	B-2
Q535	C-2
Q536	C-2
Q537	C-2 *
Q538	C-3 *
Q539	C-3 *
Q540	C-3 *
Q541	G-4 *
Q601	F-2 *
Q602	H-4 *
Q603	F-3 *
Q604	E-3 *
Q605	F-3 *
Q606	F-4 *
Q607	E-4 *
Q610	G-2 *
Q611	G-2 *
Q612	F-2 *
Q613	D-3 *
Q614	C-3 *
Q615	D-3 *
Q616	D-4 *
Q617	D-2 *
Q618	G-3 *
Q619	G-3 *
Q620	F-3 *
Q621	F-3 *
Q622	G-3 *
Q623	H-3 *
Q629	H-3 *
Q630	G-3 *
Q631	A-1 *
Q637	H-3 *
Q638	H-3 *
Q639	H-2 *
Q640	E-4 *
Q641	F-2 *
Q801	H-1 *
Q802	H-1 *
Q803	G-1 *
Q804	H-1
Q805	G-1
Q806	G-1 *
Q807	F-1 *
Q808	F-1 *
Q809	F-1
Q810	F-1
Q811	F-1
Q812	F-1
Q813	F-1 *
Q814	B-1
Q815	B-1 *
Q816	B-1
Q817	C-1 *
Q818	C-1 *
Q819	B-2
Q820	B-2
Q821	B-2 *
Q822	B-1 *
Q823	C-2 *
Q824	C-2 *
Q825	D-2 *
Q826	C-1 *
Q827	D-1
Q828	D-1
Q829	D-1 *
Q830	D-1
Q831	E-1 *
Q832	E-1 *
Q833	E-1
Q834	E-1
Q835	E-1 *
Q836	B-1
Q837	A-1
Q838	H-1
RV501	A-3
RV502	A-3
RV601	F-3
RV602	F-2
RV603	E-4
RV604	F-1
RV606	G-3
RV800	B-1
RV801	B-2
RV802	C-1
RV860	E-1
TP501	B-3 *
TP502	B-2 *
TP601	F-3 *
TP602	F-2 *
TP603	G-3 *
TP605	F-3 *
TP606	E-2 *
TP607	E-3 *
TP608	D-3 *
TP610	D-4 *
TP801	B-1 *
TP820	B-1 *
TP850	E-1 *
TP851	E-1 *
TP870	E-1 *
TP890	E-1 *
X601	D-1

* mark ; B SIDE mount


H
G
E
D
C
B
CN212
CN213
PS101
CV603
CV802
CV801
CV800
RV860
RV802
RV801
RV601
RV602
RV603
RV604
RV606
TP890
TP870
TP601
TP603
TP605
TP606
TP608
TP610
MADE IN JAPAN
1-643-738-11 CR-39


1-643-738-11 CR-39
MADE IN JAPAN
B
A
B
C
D
E
1
2
3
4
TP890
TP870
TP850
TP820
TP801
TP606
TP601
TP605
TP607
TP610
TP608
TP502
TP501
RV860
RV802
RV801
RV800
RV603
RV601
RV602
RV604
RV502
RV501
CV802
CV801
CV800
CV601
CV602
CV603
E801
E501

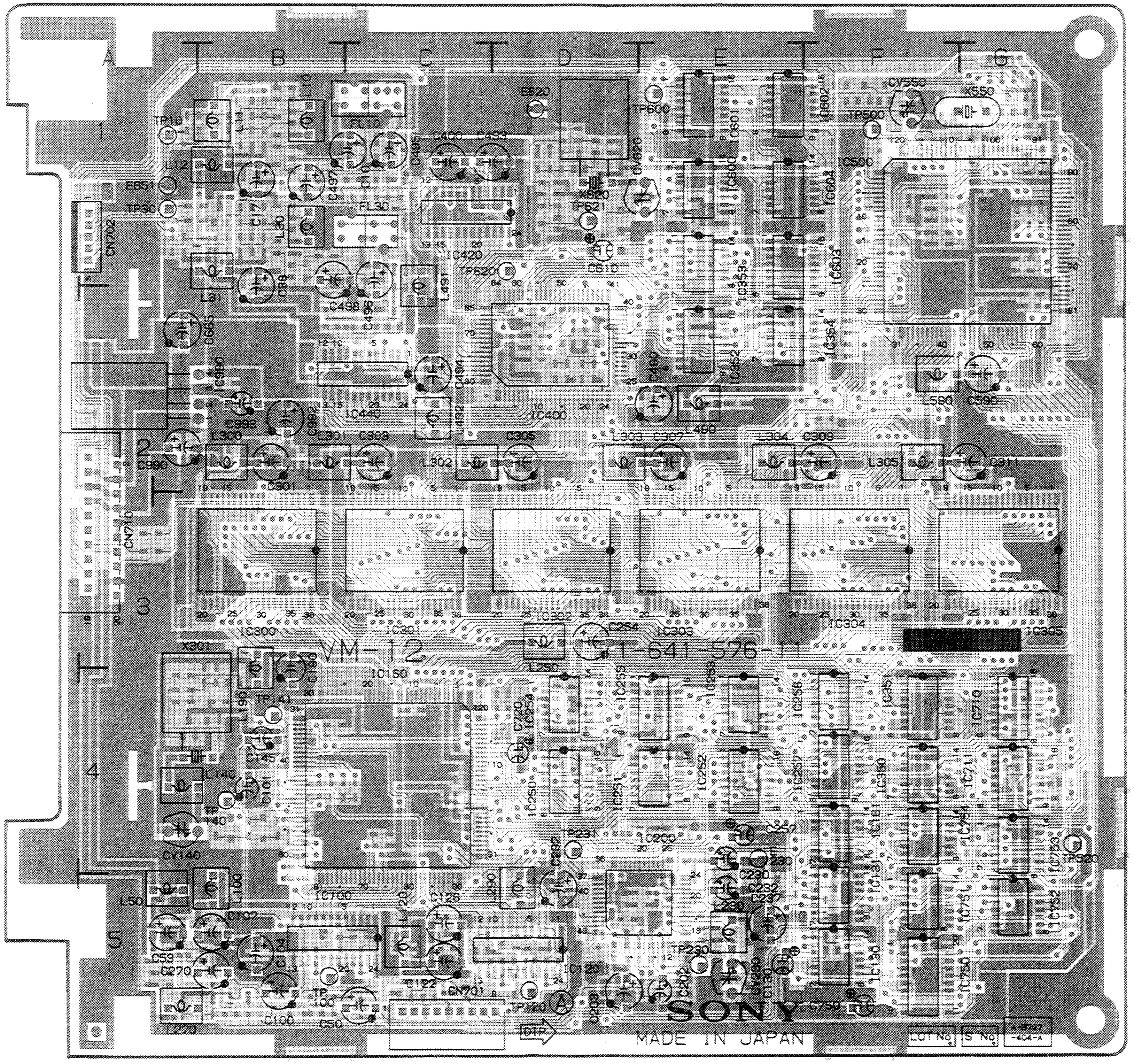
CR-39 — B SIDE —
1-643-738-11 (1)
SVO-9500MDP

VM-12P ; CHROMA NOISE REDUCER/VIDEO MEMORY/CHROMA ENCODER S/N UP TO 10030 (EK)

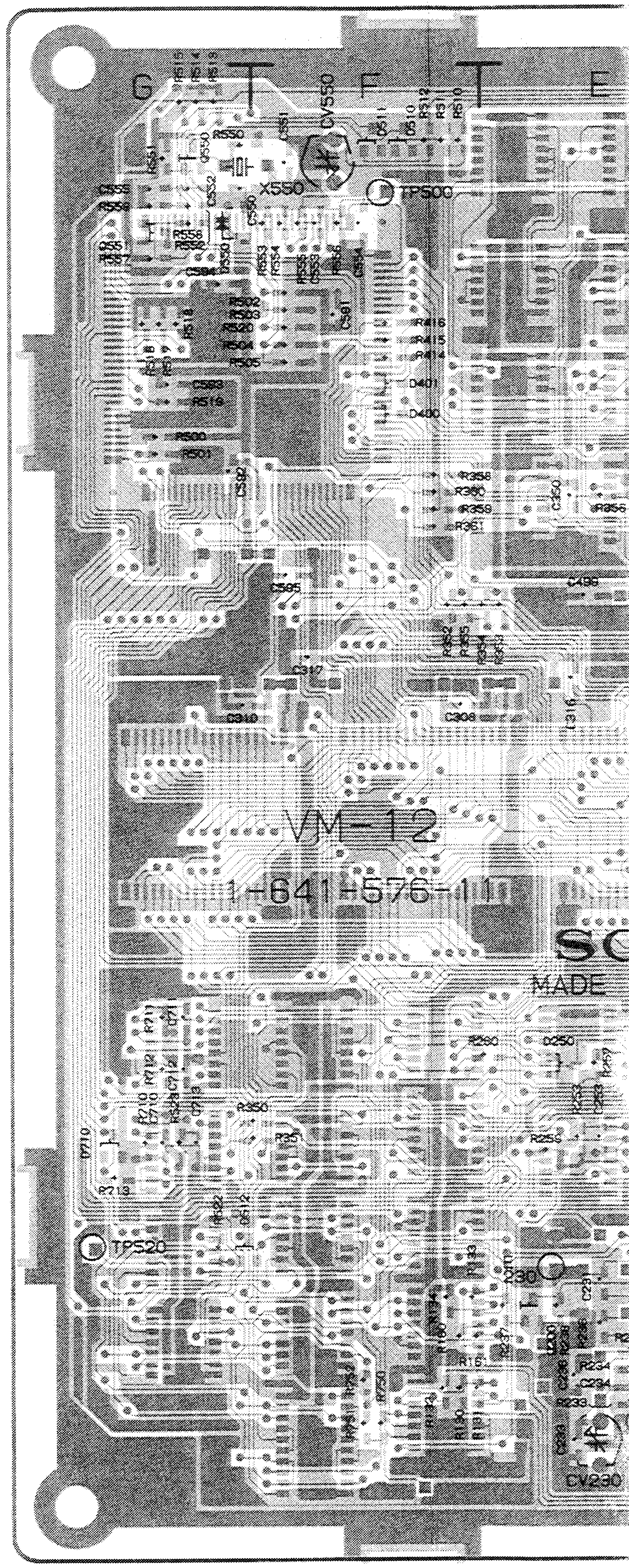
VM-12P (1-641-576-11, 12)

CN701	C-5
CN702	A-1
CN710	A-3
CV140	A-4
CV230	E-5
CV550	F-1
CV620	D-1
D140	B-4 *
D230	E-5 *
D250	E-4 *
D400	F-1 *
D401	F-1 *
D510	F-1 *
D511	F-1 *
D512	G-4 *
D620	D-1 *
D710	G-4 *
D720	C-4 *
E230	E-4
E620	D-1
E651	A-1
FL10	C-1
FL30	C-1
IC100	B-5
IC120	D-5
IC130	F-5
IC131	F-5
IC160	C-4
IC161	F-4
IC200	E-4
IC250	D-4
IC251	D-4
IC252	E-4
IC253	E-4
IC254	D-4
IC255	D-4
IC256	E-4
IC257	E-4
IC300	B-3
IC301	C-3
IC302	D-3
IC303	E-3
IC304	F-3
IC305	G-3
IC350	F-4
IC351	F-4
IC352	E-2
IC353	E-2
IC354	F-2
IC400	D-2
IC420	C-1
IC440	C-2
IC500	F-1
IC600	E-1
IC601	E-1
IC602	F-1
IC603	F-1
IC604	F-1
IC710	G-4
IC711	G-4
IC750	G-5
IC751	G-5
IC752	G-5
IC753	G-4
IC754	G-4
IC990	B-2
Q10	B-1 *
Q12	B-1 *
Q20	B-1 *
Q21	C-2 *
Q30	B-2 *
Q31	B-1 *
Q32	B-1 *
Q33	B-1 *
Q50	B-5 *
Q51	C-5 *
Q100	B-5 *
Q120	D-5 *
Q140	A-4 *
Q141	B-4 *
Q200	E-5 *
Q210	C-1 *
Q214	B-2 *
Q270	B-5 *
Q271	B-5 *
Q550	G-1 *
Q551	G-1 *
Q620	D-1 *
Q621	D-1 *
Q720	D-4 *
TP10	A-1
TP30	A-1
TP100	B-5
TP120	D-5
TP140	B-4
TP141	B-4
TP230	E-5
TP231	D-4
TP500	F-1
TP520	G-4
TP600	D-1
TP620	C-1
TP621	D-1
X301	A-3
X550	G-1
X620	D-1

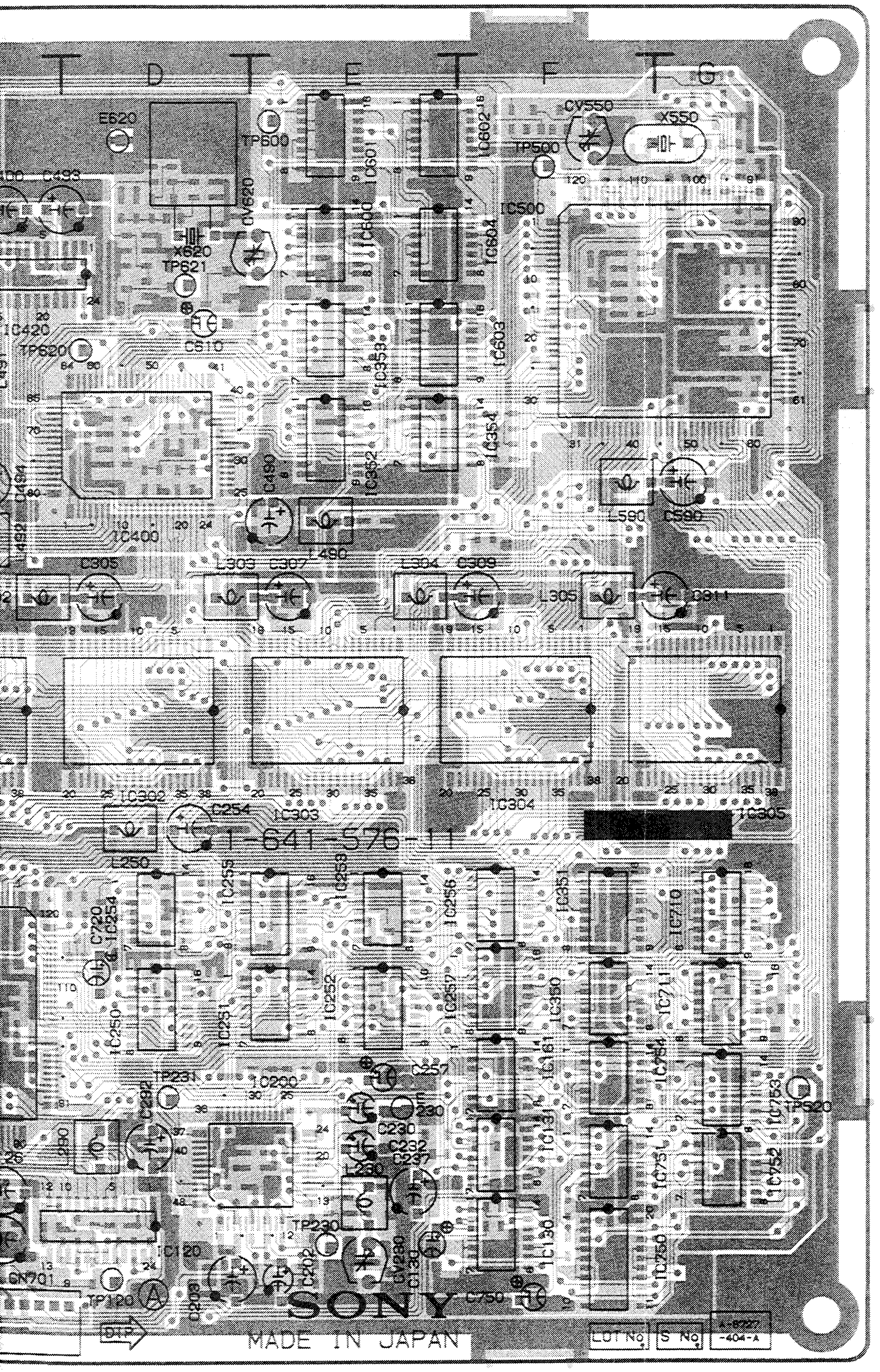
* mark ; B SIDE mount


A
B
C
D
E
F
G
1
2
3
4
5
VM-12
1-641-576-11
SONY
MADE IN JAPAN
LOT No.
S No.
CN701
CN702
CN710
IC300
IC301
IC302
IC303
IC304
IC305
IC160
IC400
IC500
TP10
TP30
TP500
TP520
TP600
X301
X550
X620

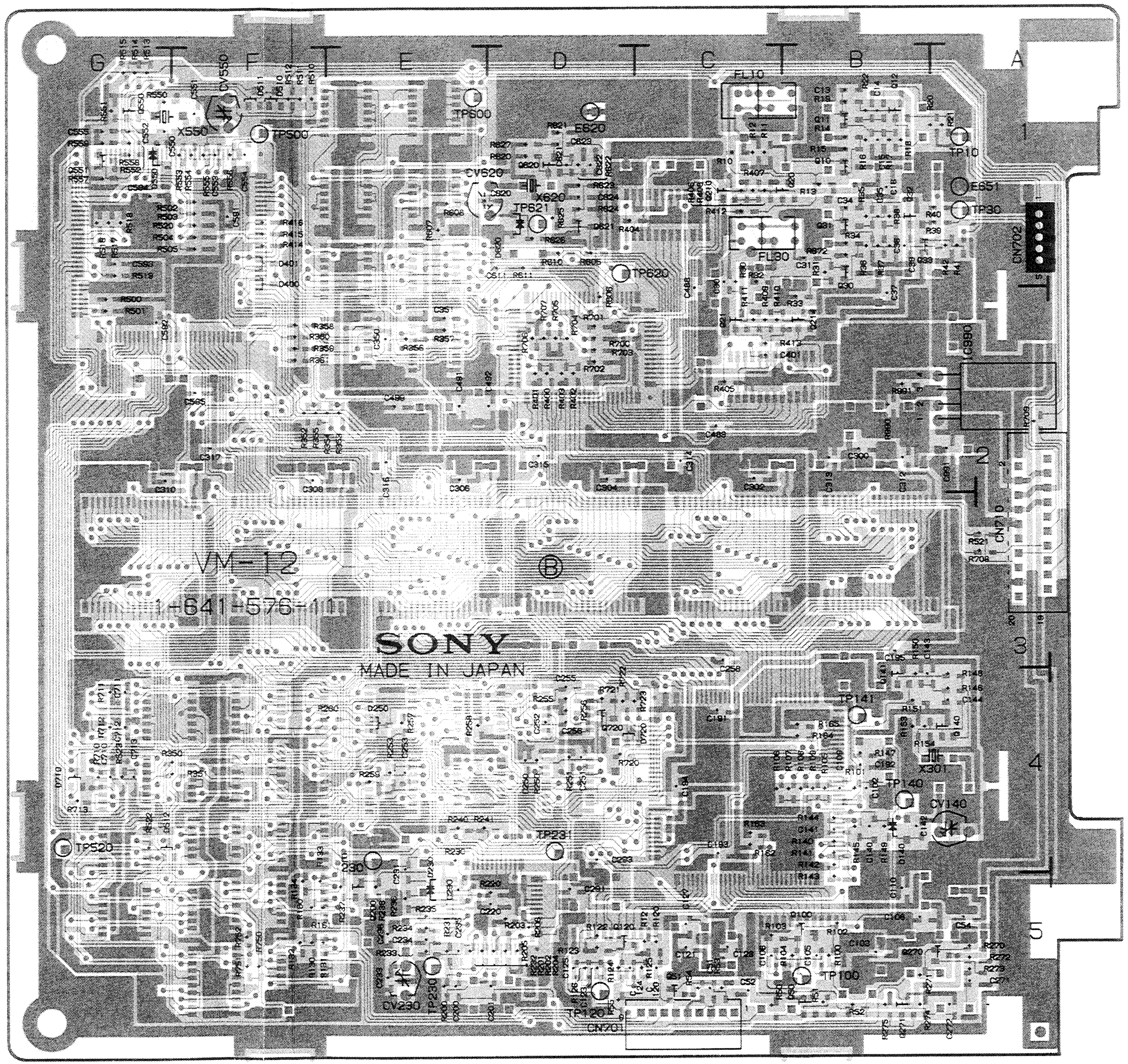
VM-12/P — A SIDE —
1-641-576-11 (1)
SVO-9500MD
SVO-9500MDP


G
F
E
VM-12
1-641-576-11
MADE
X550
TP500
TP520
CV550
CV230

(EK)


1-641-576-11
SONY
MADE IN JAPAN

VM-12/P — A SIDE —
1-641-576-11 (1)
SVO-9500MD
SVO-9500MDP


VM-12
1-641-576-11
SONY
MADE IN JAPAN

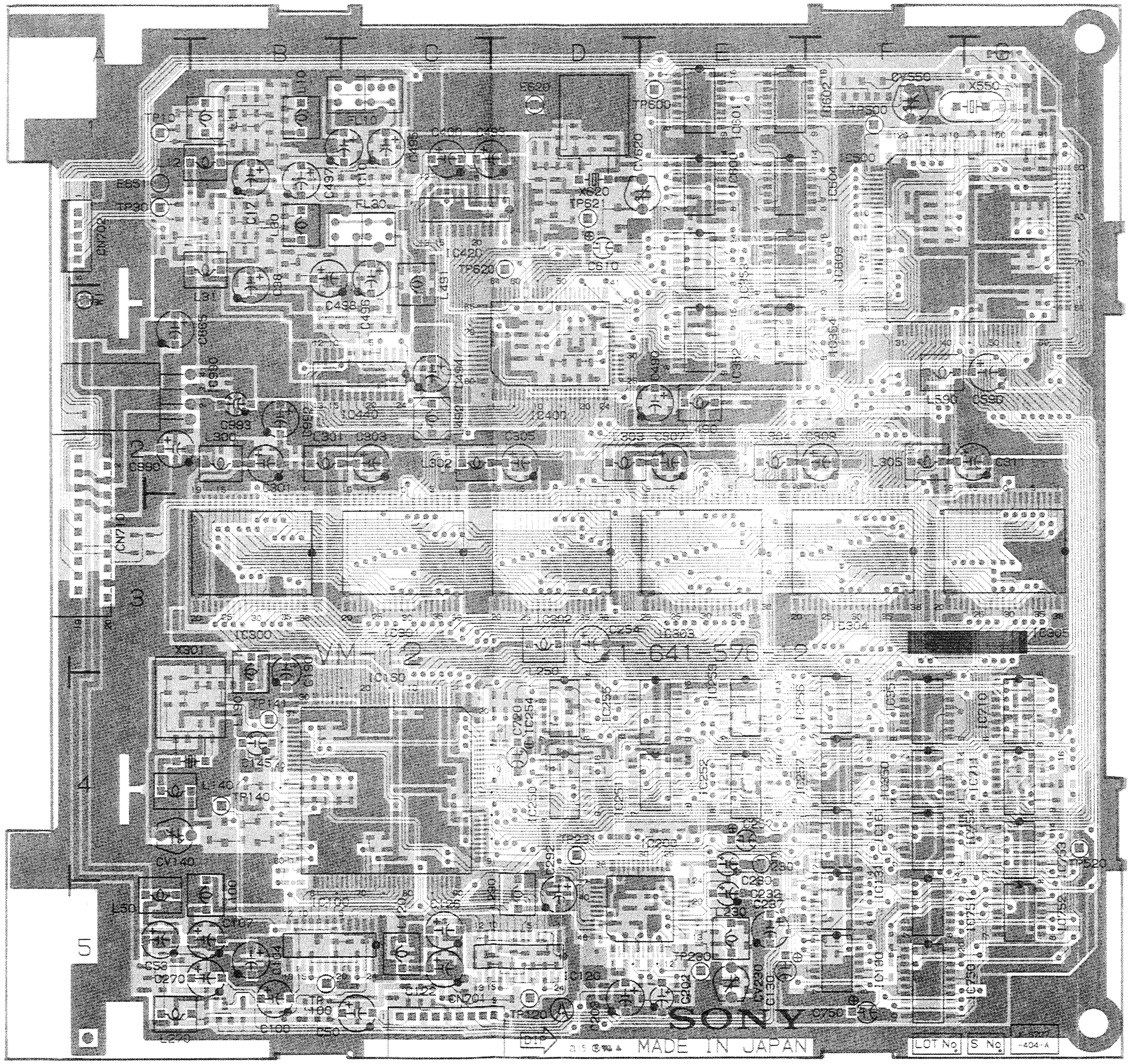
VM-12/P — B SIDE —
1-641-576-11 (1)
SVO-9500MD
SVO-9500MDP

VM-12P ; CHROMA NOISE REDUCER/VIDEO MEMORY/CHROMA ENCODER S/N 10031 AND HIGHER (EK)

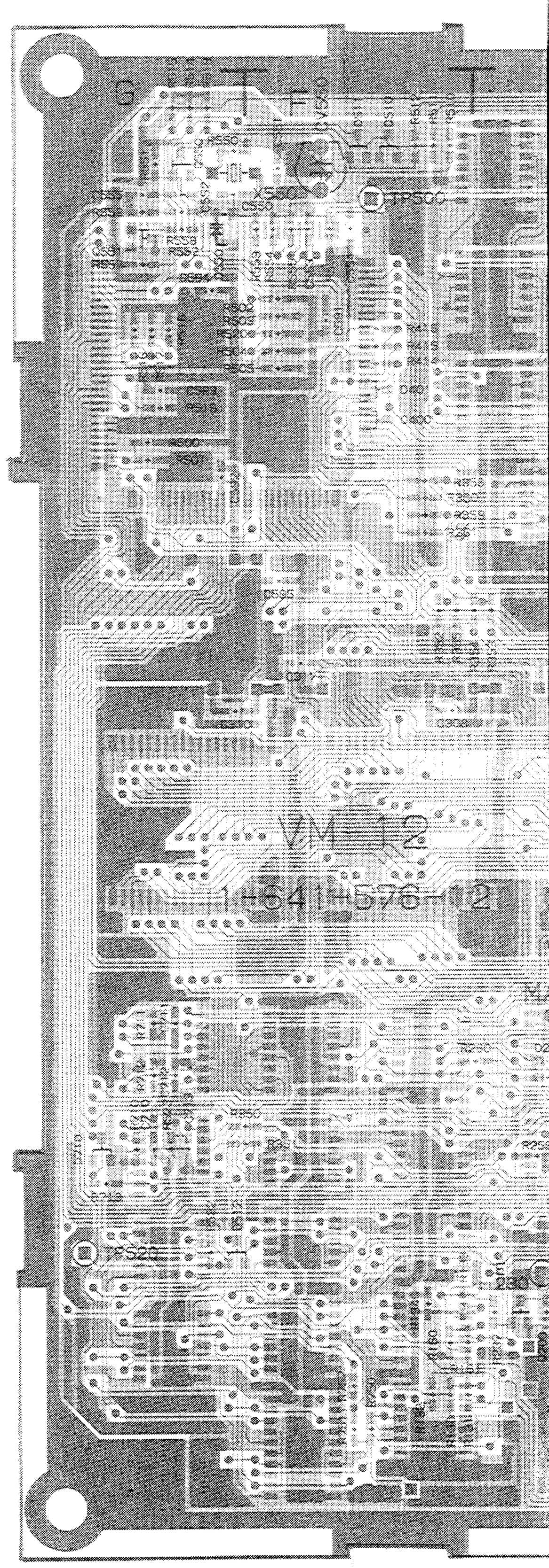
VM-12P (1-641-576-11, 12)

CN701	C-5
CN702	A-1
CN710	A-3
CV140	A-4
CV230	E-5
CV550	F-1
CV620	D-1
D140	B-4 *
D230	E-5 *
D250	E-4 *
D400	F-1 *
D401	F-1 *
D510	F-1 *
D511	F-1 *
D512	G-4 *
D620	D-1 *
D710	G-4 *
D720	C-4 *
E230	E-4
E620	D-1
E651	A-1
FL10	C-1
FL30	C-1
IC100	B-5
IC120	D-5
IC130	F-5
IC131	F-5
IC160	C-4
IC161	F-4
IC200	E-4
IC250	D-4
IC251	D-4
IC252	E-4
IC253	E-4
IC254	D-4
IC255	D-4
IC256	E-4
IC257	E-4
IC300	B-3
IC301	C-3
IC302	D-3
IC303	E-3
IC304	F-3
IC305	G-3
IC350	F-4
IC351	F-4
IC352	E-2
IC353	E-2
IC354	F-2
IC400	D-2
IC420	C-1
IC440	C-2
IC500	F-1
IC600	E-1
IC601	E-1
IC602	F-1
IC603	F-1
IC604	F-1
IC710	G-4
IC711	G-4
IC750	G-5
IC751	G-5
IC752	G-5
IC753	G-4
IC754	G-4
IC990	B-2
Q10	B-1 *
Q12	B-1 *
Q20	B-1 *
Q21	C-2 *
Q30	B-2 *
Q31	B-1 *
Q32	B-1 *
Q33	B-1 *
Q50	B-5 *
Q51	C-5 *
Q100	B-5 *
Q120	D-5 *
Q140	A-4 *
Q141	B-4 *
Q200	E-5 *
Q210	C-1 *
Q214	B-2 *
Q270	B-5 *
Q271	B-5 *
Q550	G-1 *
Q551	G-1 *
Q620	D-1 *
Q621	D-1 *
Q720	D-4 *
TP10	A-1
TP30	A-1
TP100	B-5
TP120	D-5
TP140	B-4
TP141	B-4
TP230	E-5
TP231	D-4
TP500	F-1
TP520	G-4
TP600	D-1
TP620	C-1
TP621	D-1
X301	A-3
X550	G-1
X620	D-1

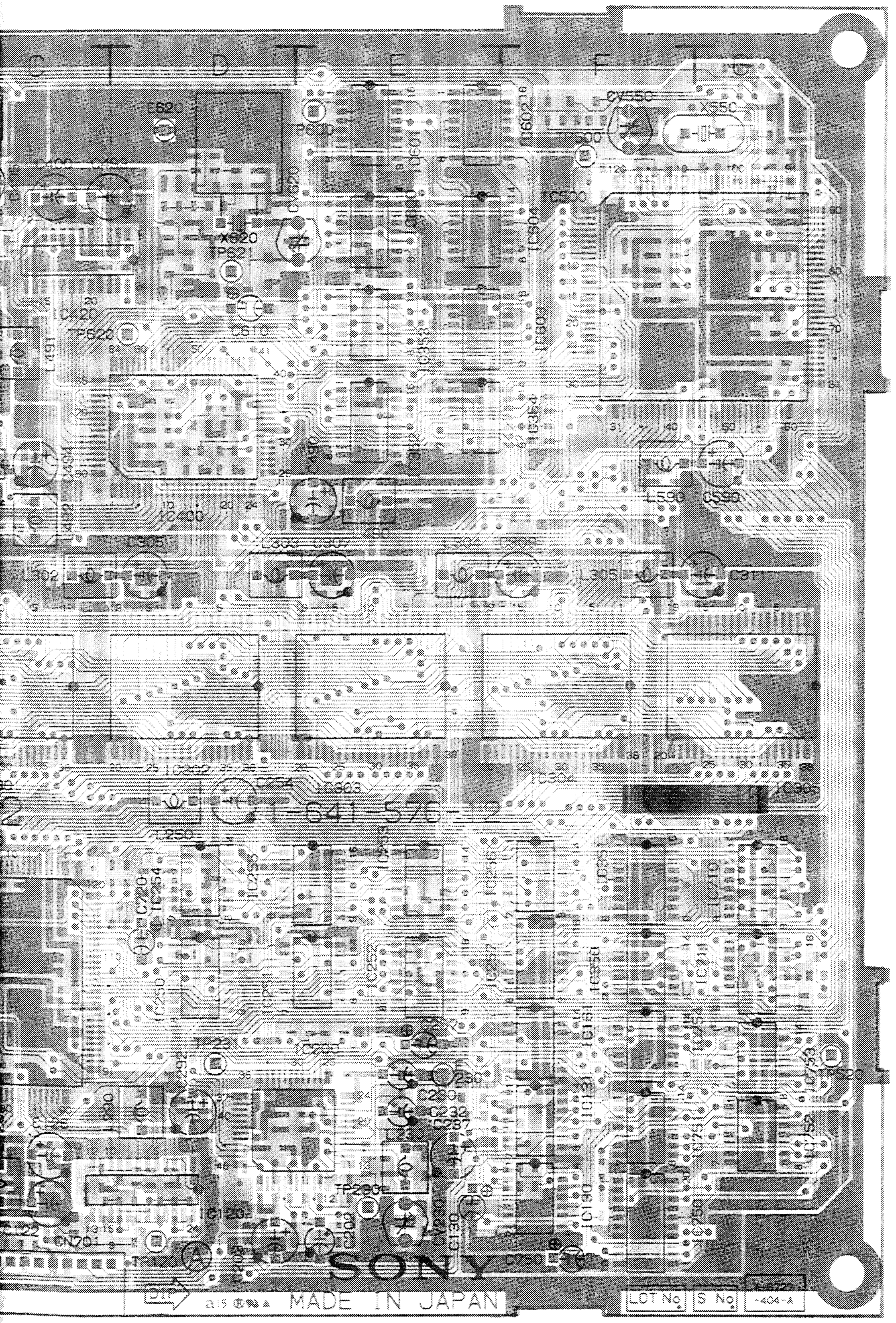
* mark ; B SIDE mount



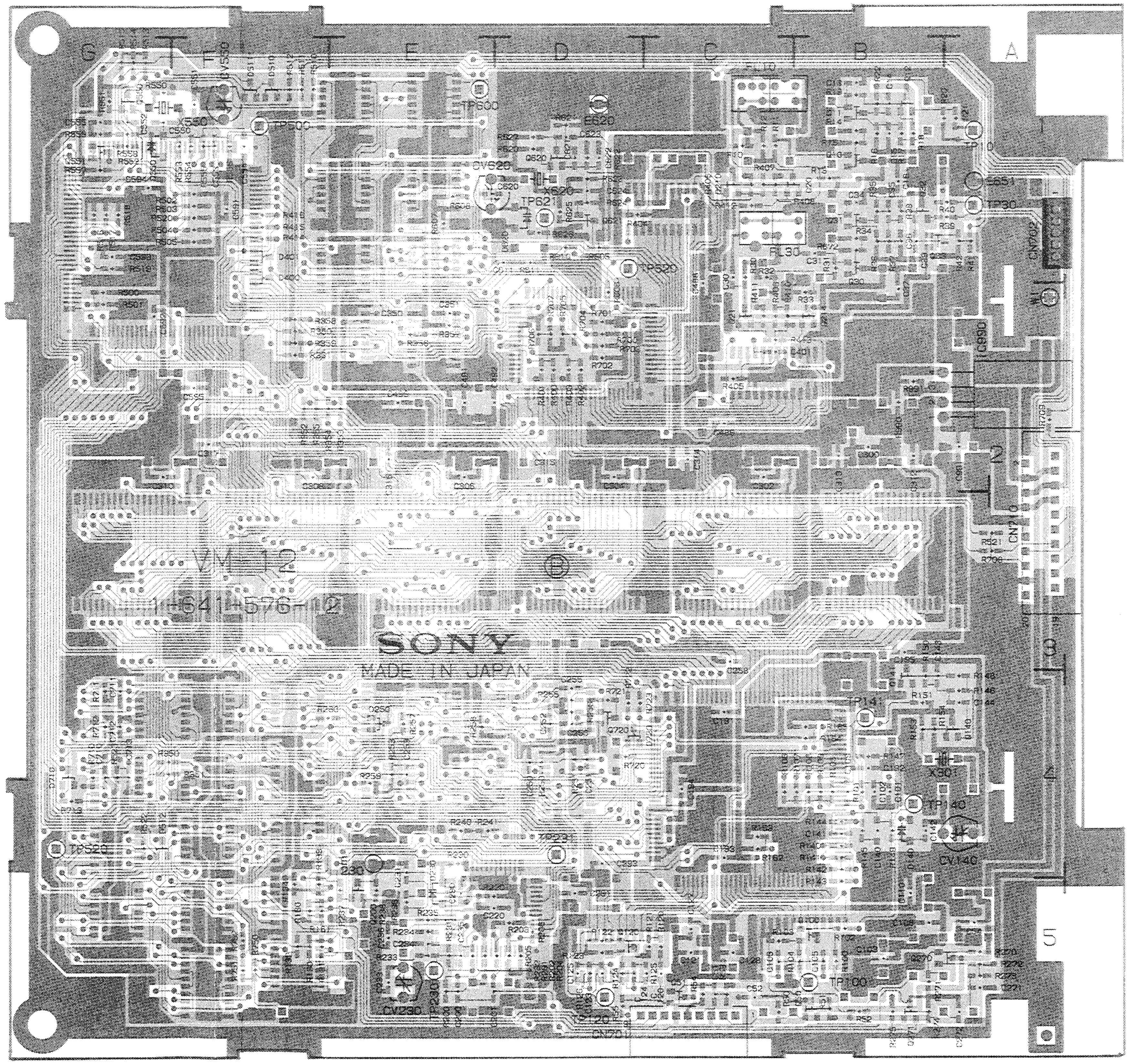
VM-12/P — A SIDE —
1-641-576-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP



HIGHER (EK)


C
D
E
F
G
SONY
MADE IN JAPAN
1-641-576-12
LOT No.
S No.
-404-A

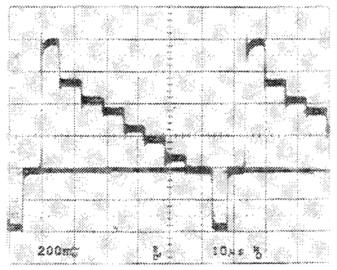
VM-12/P — A SIDE —
1-641-576-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


G
F
E
D
C
B
A
VM-12
1-641-576-12
SONY
MADE IN JAPAN
1
2
3
4
5

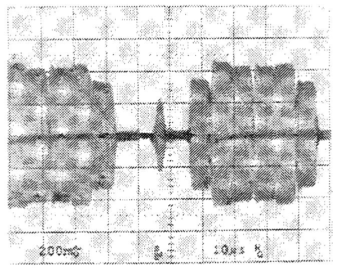
VM-12/P — B SIDE —
1-641-576-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

VM-12P (1/5) ; Y/C A-D CONVERTER & CHROMA NOISE REDUCER

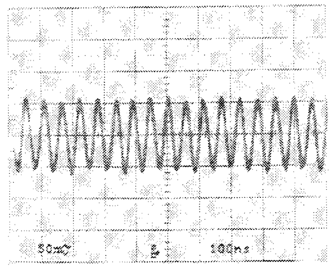
① TP100 (B-5) PB mode



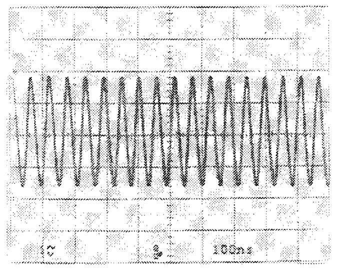
② TP120 (D-5) PB mode



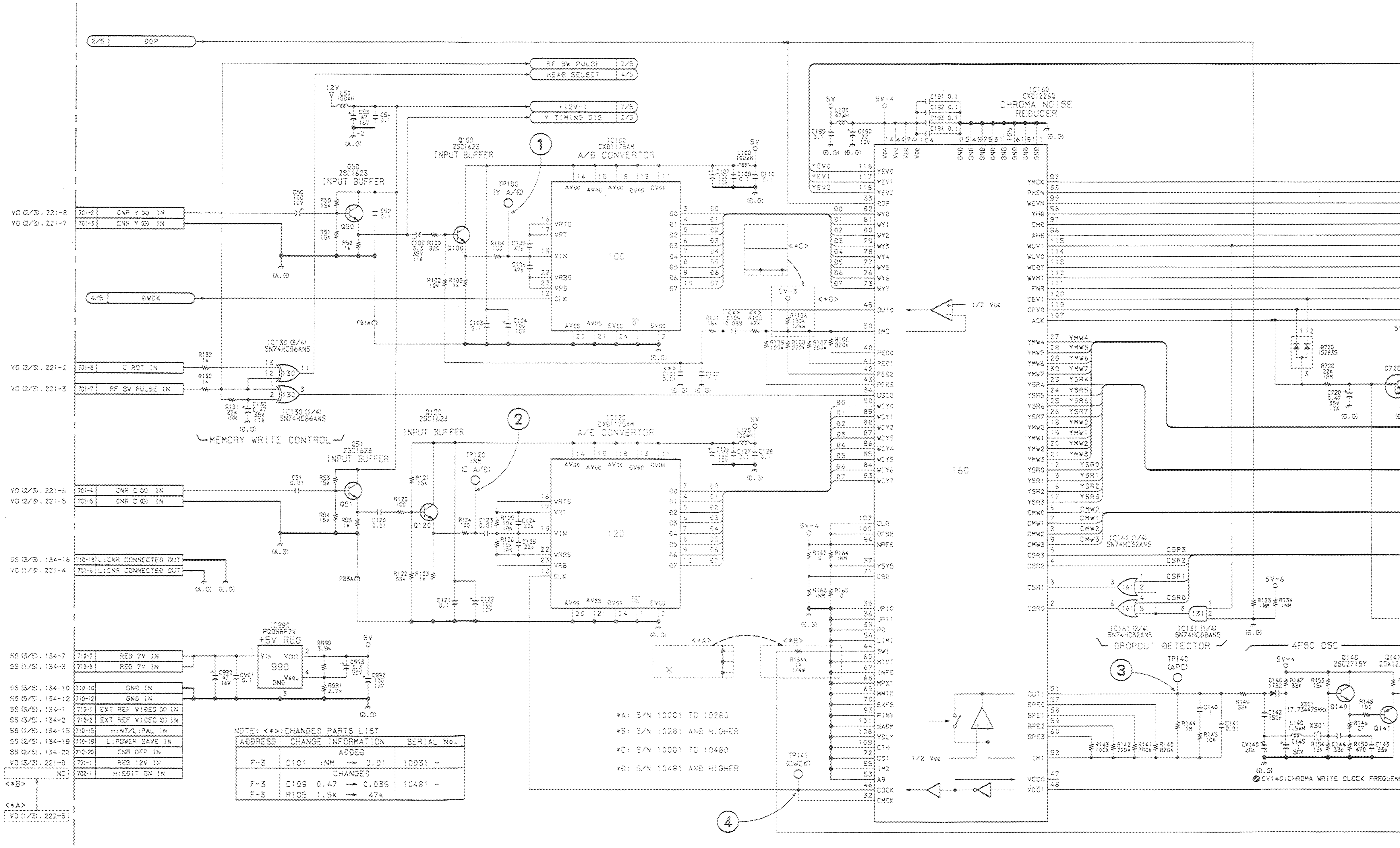
③ TP140 (B-4)



④ TP141 (B-4)



Measurement Condition
PB mode : KRV-45HPS

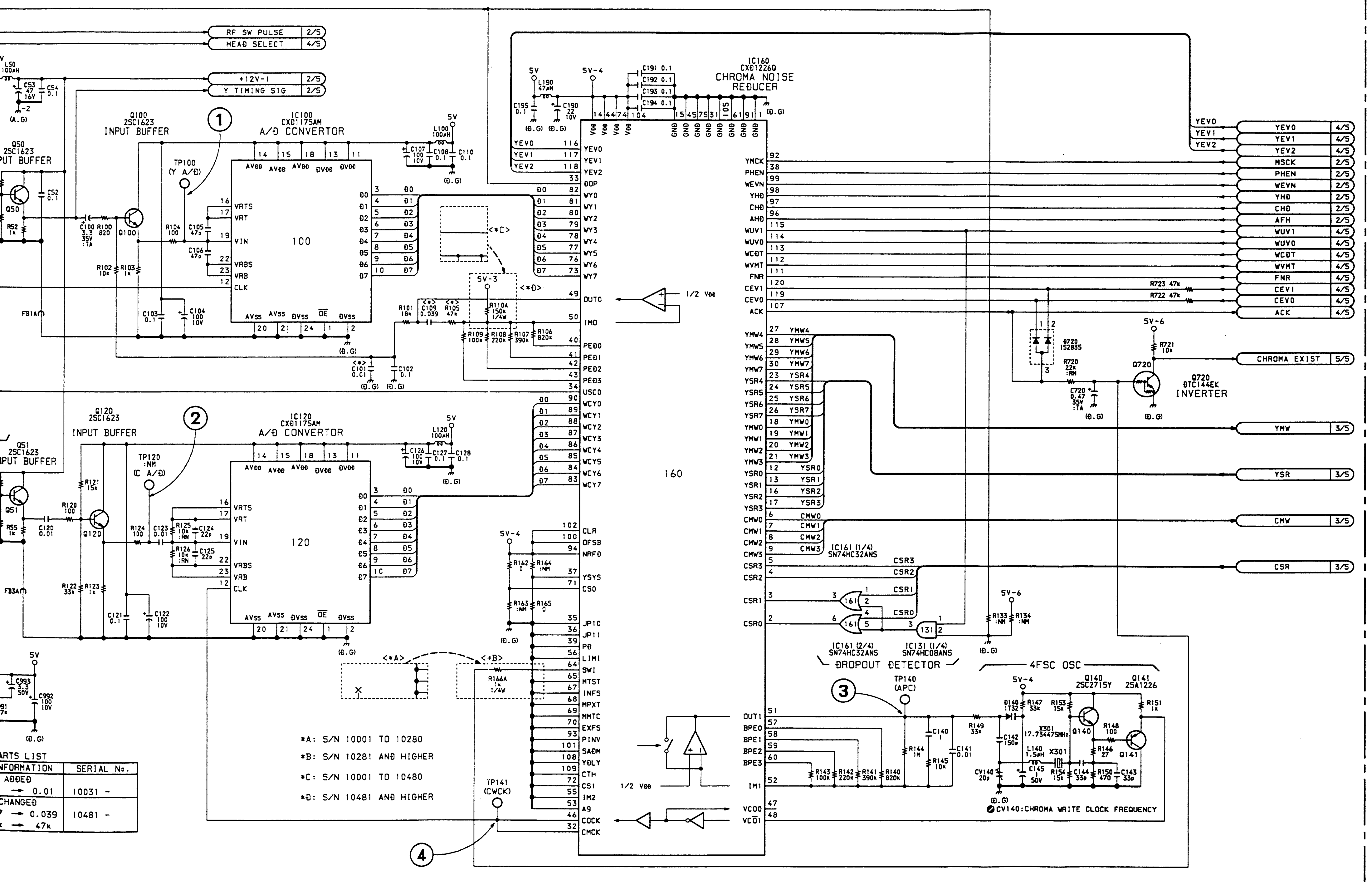

2/5 DOP
RF SW PULSE 2/5
HEAD SELECT 4/5
+12V-1 2/5
Y TIMING SIG 2/5
Q50 2SC1623 INPUT BUFFER
Q100 2SC1623 INPUT BUFFER
IC100 CXD1175AM A/D CONVERTOR
TP100 (Y A/D)
IC160 CXD1226Q CHROMA NOISE REDUCER
4/5 EWCK
CNR Y DO IN
CNR Y DO IN
C ROT IN
RF SW PULSE IN
IC130 (3/4) SN74HC86ANS
IC130 (1/4) SN74HC86ANS
MEMORY WRITE CONTROL
Q120 2SC1623 INPUT BUFFER
Q51 2SC1623 INPUT BUFFER
IC120 CXD1175AM A/D CONVERTOR
TP120 (C A/D)
CNR C DO IN
CNR C DO IN
L:CNR CONNECTED OUT
L:CNR CONNECTED OUT
IC990 PQ05RF2V +5V REG
REG 9V IN
REG 7V IN
GND IN
GND IN
EXT REF VIDEO IN
EXT REF VIDEO IN
H:NTL/L:PAL IN
L:POWER SAVE IN
CNR OFF IN
REG 12V IN
H:EDIT ON IN
IC161 (4/4) SN74HC32ANS
IC161 (2/4) SN74HC32ANS
IC131 (1/4) SN74HC08ANS
DROPOUT DETECTOR
TP140 (APC)
4FSC OSC
Q140 2SC2715Y
X301 17.734475MHz
TP141 (CWCK)
1/2 Vcc
CV140:CHROMA WRITE CLOCK FREQUEN

NOTE: <#>:CHANGED PARTS LIST

ADDRESS	CHANGE INFORMATION	SERIAL No.
	ADDED	
F-3	C101 :NM → 0.01	10031 ~
	CHANGED	
F-3	C109 0.47 → 0.039	10481 ~
F-3	R105 1.5k → 47k	

*A: S/N 10001 TO 10280
*B: S/N 10281 AND HIGHER
*C: S/N 10001 TO 10480
*D: S/N 10481 AND HIGHER

13-15

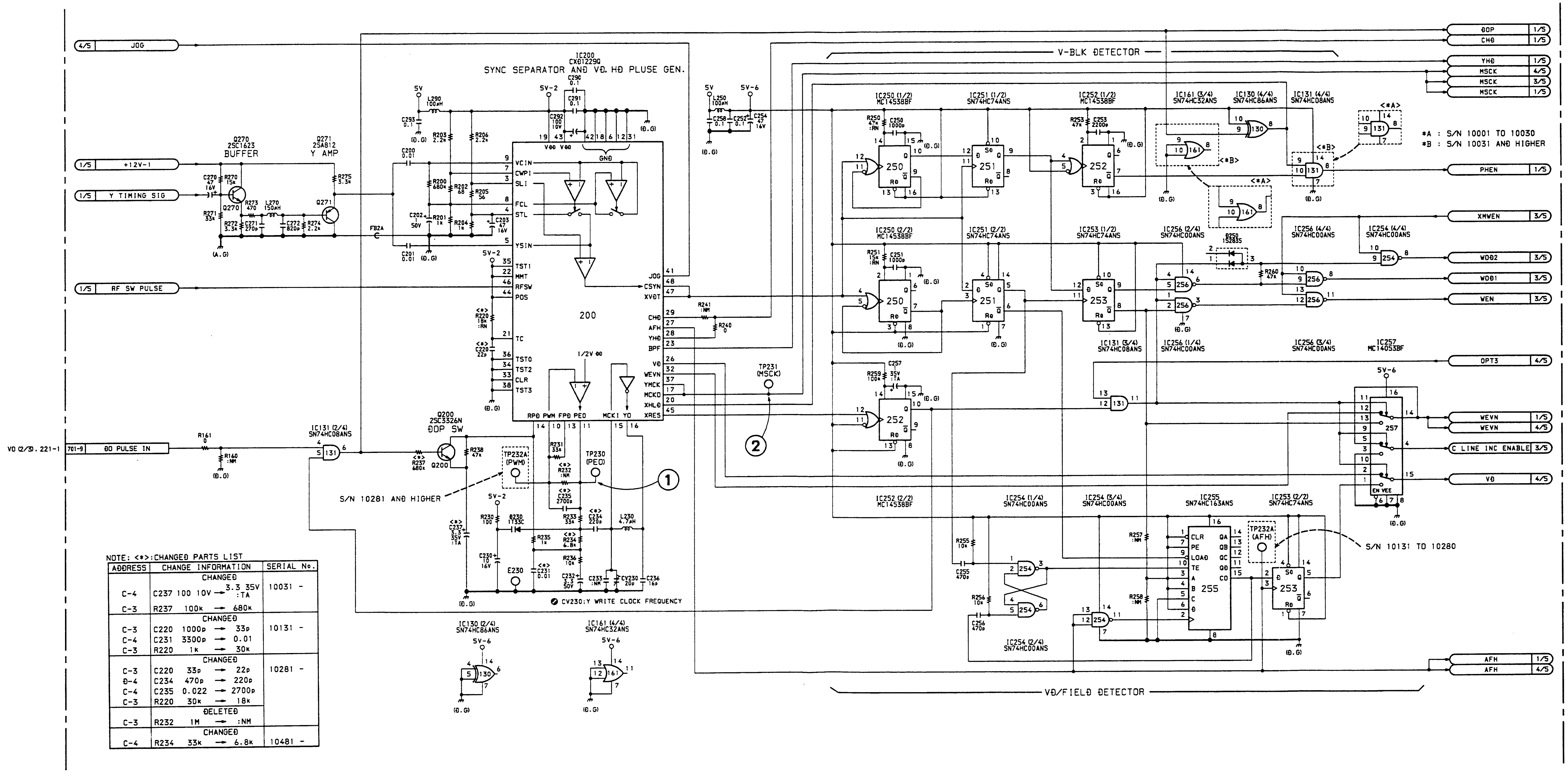

RF SW PULSE 2/5
HEAD SELECT 4/5
+12V-1 2/5
Y TIMING SIG 2/5
Q100 2SC1623 INPUT BUFFER
IC100 CXD1175AM A/D CONVERTOR
TP100 (Y A/D)
Q50 2SC1623 INPUT BUFFER
Q120 2SC1623 INPUT BUFFER
IC120 CXD1175AM A/D CONVERTOR
TP120 :NM (C A/D)
Q51 2SC1623 INPUT BUFFER
IC160 CXD1226Q CHROMA NOISE REDUCER
160
IC161 (1/4) SN74HC32ANS
IC161 (2/4) SN74HC32ANS
IC131 (1/4) SN74HC08ANS
DROPOUT DETECTOR
TP140 (APC)
4FSC OSC
Q140 2SC2715Y
Q141 2SA1226
X301 17.734475MHz
CV140:CHROMA WRITE CLOCK FREQUENCY
TP141 (CWCK)
Q720 DTC144EK INVERTER
D720 1S2835
CHROMA EXIST 5/5
YEV0 4/5
YEV1 4/5
YEV2 4/5
MSCK 2/5
PHEN 2/5
WEVN 2/5
YH0 2/5
CH0 2/5
AFH 2/5
WUV1 4/5
WUV0 4/5
WC0T 4/5
WVMT 4/5
FNR 4/5
CEV1 4/5
CEV0 4/5
ACK 4/5
YMW 3/5
YSR 3/5
CMW 3/5
CSR 3/5
1/2 VDD
<*A> <*B> <*C> <*D>
*A: S/N 10001 TO 10280
*B: S/N 10281 AND HIGHER
*C: S/N 10001 TO 10480
*D: S/N 10481 AND HIGHER
①
②
③
④

ARTS LIST	
NFORMATION	SERIAL No.
ADDED	
→ 0.01	10031 -
CHANGED	
→ 0.039	10481 -
→ 47k	

VM-12P (1/5)

1-641-576-11, 12 (1)
SVO-9500MDP

VM-12P (2/5) ; SYNC SEPARATOR & VD・HD PULSE GENERATOR


IC200
CXD1229Q
SYNC SEPARATOR AND VD, HD PLUSE GEN.
V-BLK DETECTOR
VD/FIELD DETECTOR
JOG 4/5
+12V-1 1/5
Y TIMING SIG 1/5
RF SW PULSE 1/5
VD (2/5). 221-1 701-9 DD PULSE IN
Q270 2SC1623 BUFFER
Q271 2SA812 Y AMP
Q200 2SC3326N DOP SW
IC131 (2/4) SN74HC08ANS
IC250 (1/2) MC14538BF
IC251 (1/2) SN74HC74ANS
IC252 (1/2) MC14538BF
IC161 (3/4) SN74HC32ANS
IC130 (4/4) SN74HC86ANS
IC131 (4/4) SN74HC08ANS
IC250 (2/2) MC14538BF
IC251 (2/2) SN74HC74ANS
IC253 (1/2) SN74HC74ANS
IC256 (2/4) SN74HC00ANS
IC256 (4/4) SN74HC00ANS
IC254 (4/4) SN74HC00ANS
IC131 (3/4) SN74HC08ANS
IC256 (1/4) SN74HC00ANS
IC256 (3/4) SN74HC00ANS
IC257 MC14053BF
IC252 (2/2) MC14538BF
IC254 (1/4) SN74HC00ANS
IC254 (3/4) SN74HC00ANS
IC255 SN74HC163ANS
IC253 (2/2) SN74HC74ANS
IC254 (2/4) SN74HC00ANS
IC130 (2/4) SN74HC86ANS
IC161 (4/4) SN74HC32ANS
TP231 (MSCK)
TP230 (PEO)
TP232A (PWM)
TP232A (AFH)
S/N 10281 AND HIGHER
S/N 10131 TO 10280
*A : S/N 10001 TO 10030
*B : S/N 10031 AND HIGHER
CV230:Y WRITE CLOCK FREQUENCY
DOP 1/5
CHD 1/5
YHD 1/5
MSCK 4/5
MSCK 3/5
MSCK 1/5
PHEN 1/5
XMWEN 3/5
WOD2 3/5
WOD1 3/5
WEN 3/5
OPT3 4/5
WEVN 1/5
WEVN 4/5
C LINE INC ENABLE 3/5
VD 4/5
AFH 1/5
AFH 4/5
1
2
3
4
5

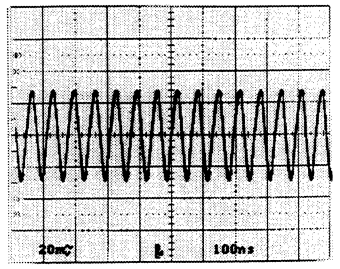
NOTE: <*>:CHANGED PARTS LIST

ADDRESS	CHANGE INFORMATION	SERIAL No.
	CHANGED	
C-4	C237 100 10V → 3.3 35V :TA	10031 -
C-3	R237 100k → 680k	
	CHANGED	
C-3	C220 1000p → 33p	10131 -
C-4	C231 3300p → 0.01	
C-3	R220 1k → 30k	
	CHANGED	
C-3	C220 33p → 22p	10281 -
D-4	C234 470p → 220p	
C-4	C235 0.022 → 2700p	
C-3	R220 30k → 18k	
	DELETED	
C-3	R232 1M → :NM	
	CHANGED	
C-4	R234 33k → 6.8k	10481 -

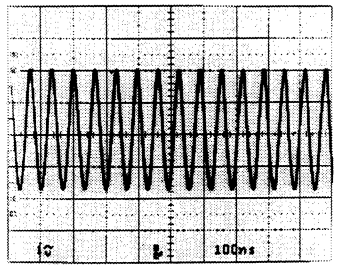
VM-12P (2/5)

1-641-576-11, 12 (1)
SVO-9500MDP

① TP230 (E-5)

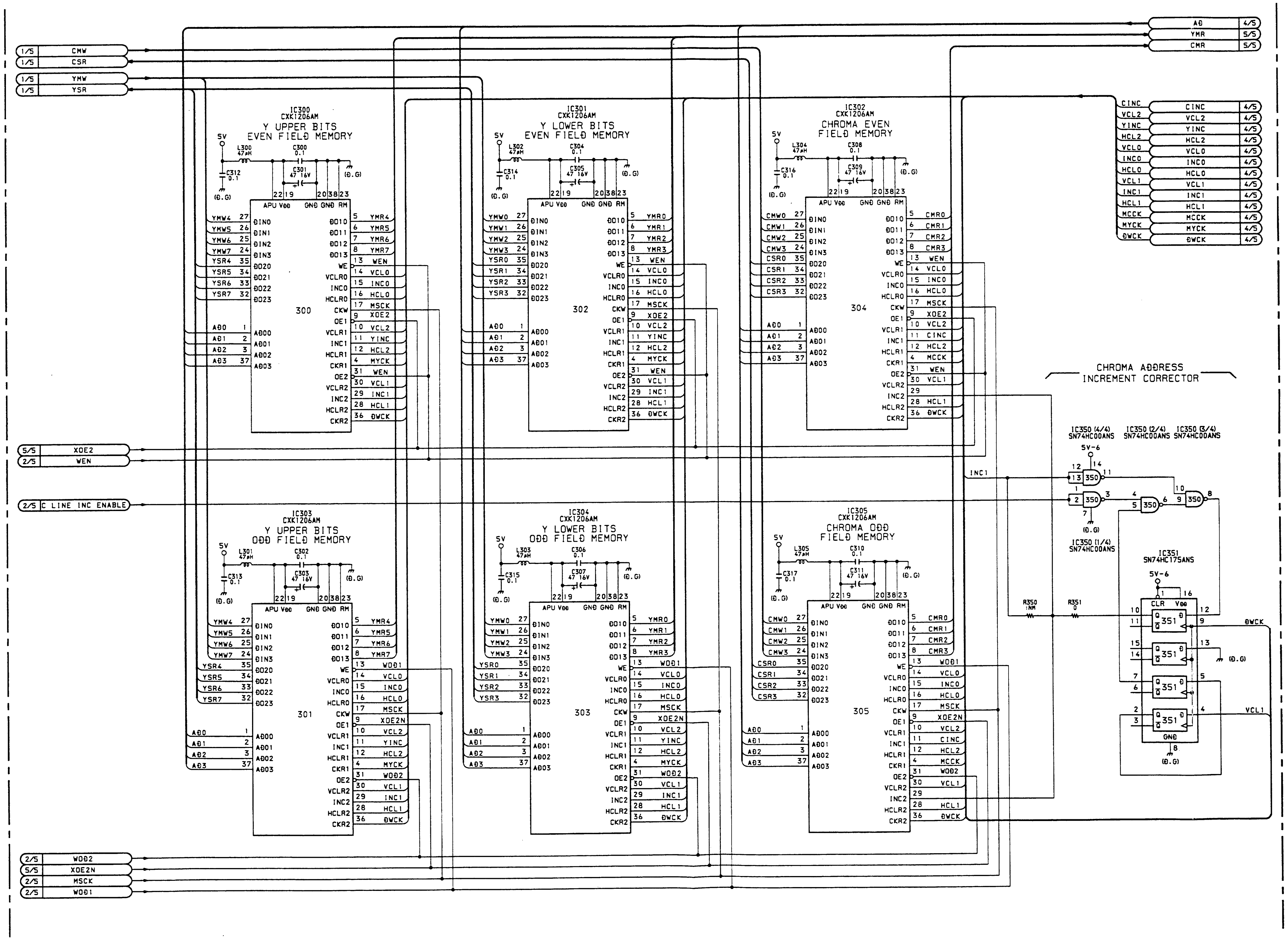


② TP231 (D-4)



13-17

VM-12P (3/5) ; Y/C FIELD MEMORY



IC300 CXK1206AM Y UPPER BITS EVEN FIELD MEMORY
IC301 CXK1206AM Y LOWER BITS EVEN FIELD MEMORY
IC302 CXK1206AM CHROMA EVEN FIELD MEMORY
IC303 CXK1206AM Y UPPER BITS ODD FIELD MEMORY
IC304 CXK1206AM Y LOWER BITS ODD FIELD MEMORY
IC305 CXK1206AM CHROMA ODD FIELD MEMORY
CHROMA ADDRESS INCREMENT CORRECTOR
IC350 (4/4) SN74HC00ANS
IC350 (2/4) SN74HC00ANS
IC350 (3/4) SN74HC00ANS
IC350 (1/4) SN74HC00ANS
IC351 SN74HC175ANS
5V-6
CMW
CSR
YMW
YSR
XOE2
WEN
C LINE INC ENABLE
WOD2
XOE2N
MSCK
WOD1
AO
YMR
CMR
CINC
VCL2
YINC
HCL2
VCLO
INCO
HCLO
VCL1
INC1
HCL1
MCCK
MYCK
OWCK
INC1
R350
R351
(D.G)
5V

1

2

3

4

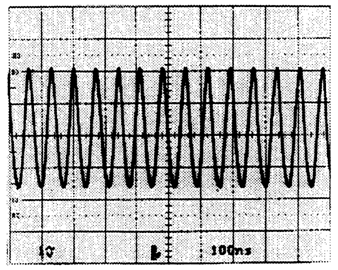
5

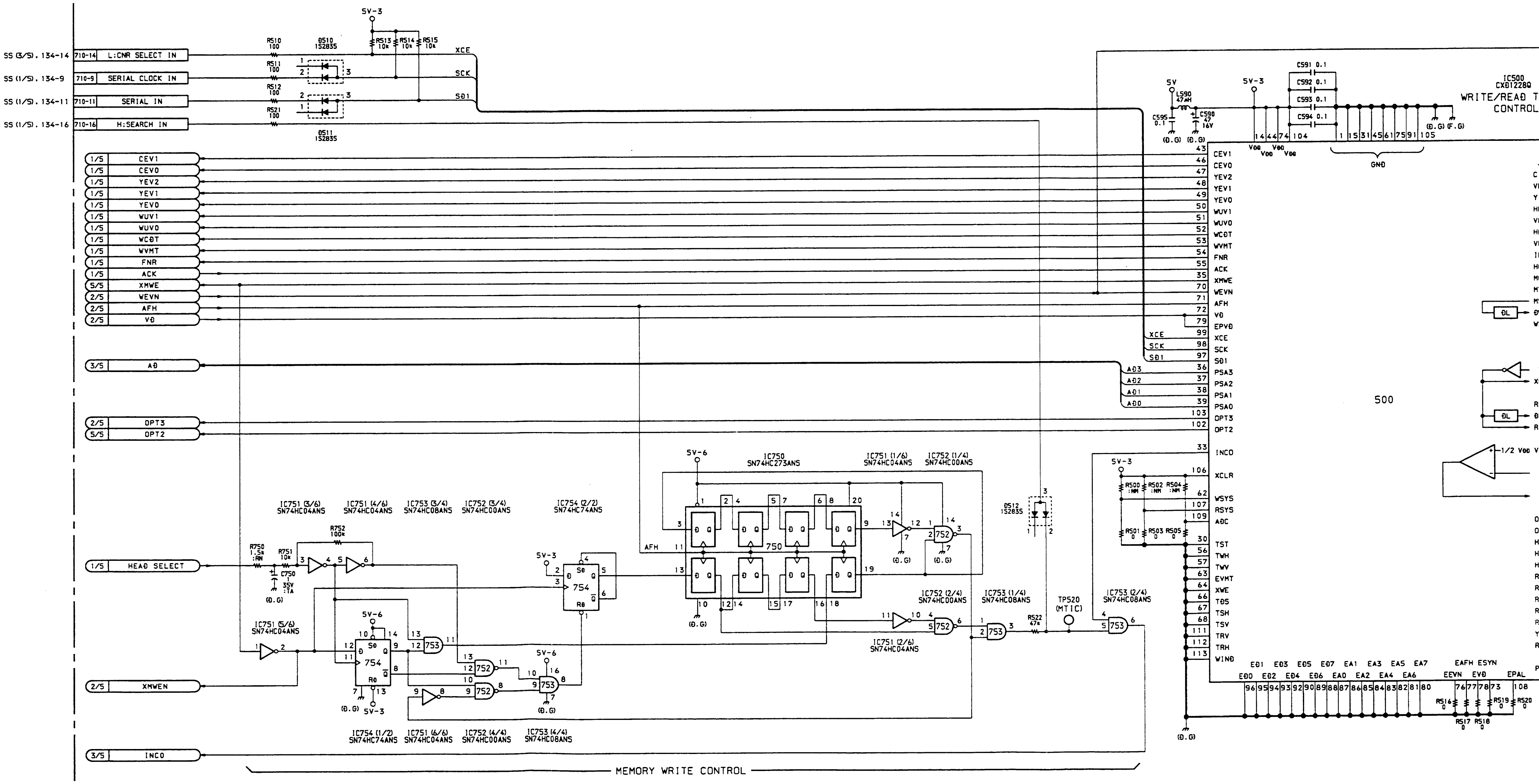
VM-12P (3/5)

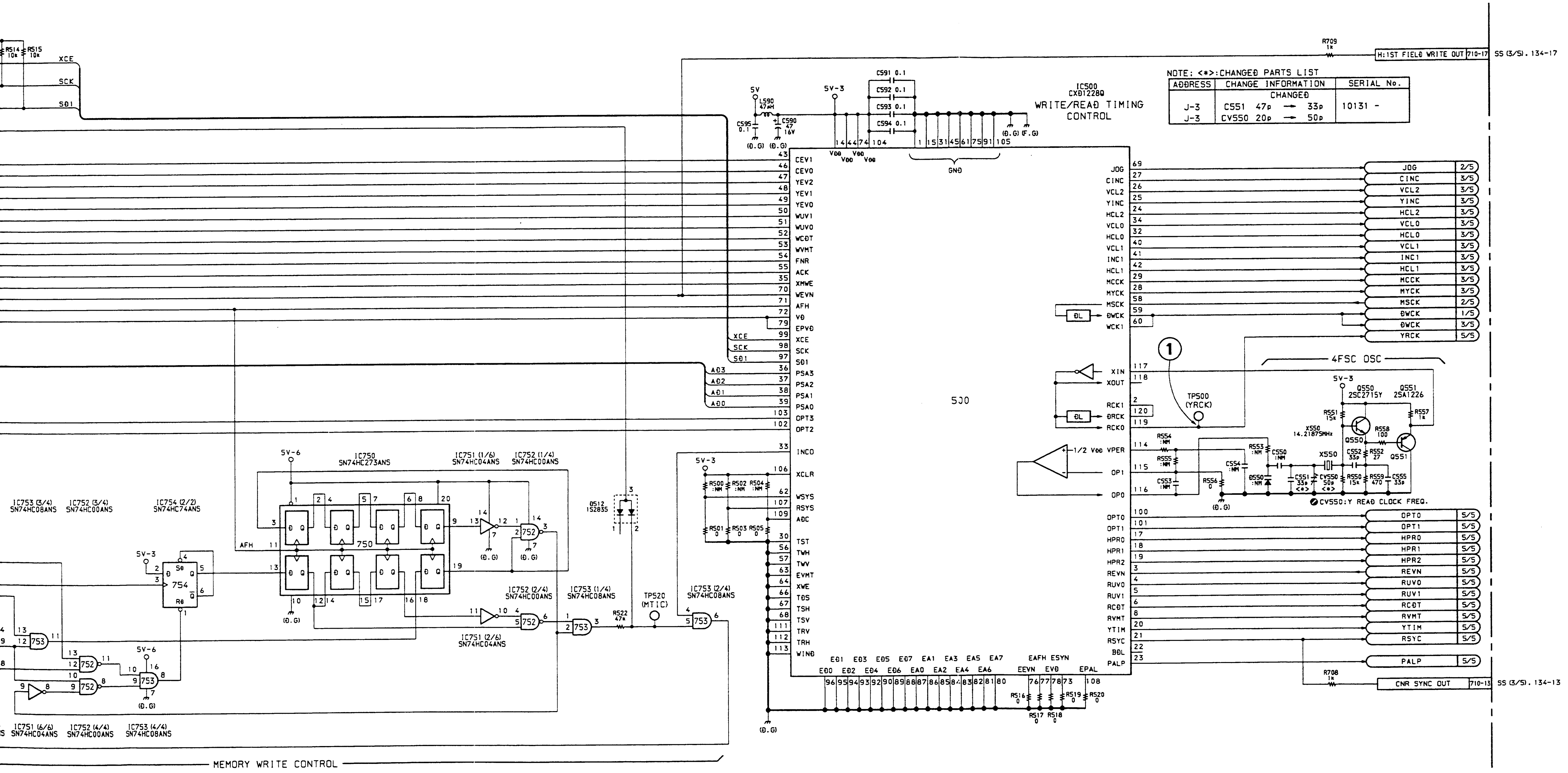
1-641-576-11, 12 (1)
SVO-9500MDP

VM-12P (4/5); WRITE/READ TIMING CONTROL

① TP500 (F-1)




5V-3
R510 100
D510 1S2835
R511 100
R512 100
R521 100
D511 1S2835
R513 10k
R514 10k
R515 10k
XCE
SCK
SDI
SS (3/5). 134-14
SS (1/5). 134-9
SS (1/5). 134-11
SS (1/5). 134-16
710-14 L:CNR SELECT IN
710-9 SERIAL CLOCK IN
710-11 SERIAL IN
710-16 H:SEARCH IN
1/5 CEV1
1/5 CEV0
1/5 YEV2
1/5 YEV1
1/5 YEV0
1/5 WUV1
1/5 WUV0
1/5 WCDT
1/5 WVMT
1/5 FNR
1/5 ACK
5/5 XMWE
2/5 WEVN
2/5 AFH
2/5 V0
3/5 A0
2/5 OPT3
5/5 OPT2
1/5 HEAD SELECT
2/5 XMWEN
3/5 INCO
IC751 (3/6) SN74HC04ANS
IC751 (4/6) SN74HC04ANS
IC753 (3/4) SN74HC08ANS
IC752 (3/4) SN74HC00ANS
IC754 (2/2) SN74HC74ANS
R752 100k
R750 1.5k :NM
R751 10k
C750 1 35V :TA
IC751 (5/6) SN74HC04ANS
IC754 (1/2) SN74HC74ANS
IC751 (6/6) SN74HC04ANS
IC752 (4/4) SN74HC00ANS
IC753 (4/4) SN74HC08ANS
5V-6
5V-3
(D.G)
754
752
753
IC750 SN74HC273ANS
750
AFH
IC751 (1/6) SN74HC04ANS
IC752 (1/4) SN74HC00ANS
IC752 (2/4) SN74HC00ANS
IC753 (1/4) SN74HC08ANS
IC751 (2/6) SN74HC04ANS
D512 1S2835
TP520 (MTIC)
R522 47k
IC753 (2/4) SN74HC08ANS
MEMORY WRITE CONTROL
5V
L590 47μH
C595 0.1
C590 47 16V
C591 0.1
C592 0.1
C593 0.1
C594 0.1
IC500 CXD1228Q WRITE/READ T CONTROL
VDD
GND
(D.G) (F.G)
CEV1 CEV0 YEV2 YEV1 YEV0 WUV1 WUV0 WCDT WVMT FNR ACK XMWE WEVN AFH V0 EPV0 XCE SCK SDI PSA3 PSA2 PSA1 PSA0 OPT3 OPT2 INCO XCLR WSYS RSYS ADC TST TWH TWV EVMT XWE TDS TSH TSV TRV TRH WIND
AD3 AD2 AD1 AD0
500
R500 :NM
R502 :NM
R504 :NM
R501 0
R503 0
R505 0
E01 E03 E05 E07 EA1 EA3 EA5 EA7
E00 E02 E04 E06 EA0 EA2 EA4 EA6
EAFH ESYN
EEVN EV0
EPAL
R516 0
R517 0
R518 0
R519 0
R520 0
DL
1/2 VDD


IC500
CXD1228Q
WRITE/READ TIMING CONTROL
GND
CEV1
CEV0
YEV2
YEV1
YEV0
WUV1
WUV0
WCDT
WVMT
FNR
ACK
XMWE
WEVN
AFH
VD
EPVD
XCE
SCK
SO1
PSA3
PSA2
PSA1
PSA0
OPT3
OPT2
INCD
XCLR
WSYS
RSYS
ADC
TST
TWH
TWV
EVMT
XWE
TDS
TSH
TSV
TRV
TRH
WIND
JOG
CINC
VCL2
YINC
HCL2
VCL0
HCL0
VCL1
INC1
HCL1
MCCK
MYCK
MSCK
BWCK
WCK1
XIN
XOUT
RCK1
BRCK
RCK0
1/2 VDD VPER
OP1
OP0
OPT0
OPT1
HPR0
HPR1
HPR2
REVN
RUV0
RUV1
RCDT
RVMT
YTIM
RSYC
BDL
PALP
H:1ST FIELD WRITE OUT
710-17
SS (3/5). 134-17
CNR SYNC OUT
710-13
SS (3/5). 134-13
R709 1k
R708 1k
4FSC OSC
TP500 (YRCK)
X550 14.31818MHz
Q550 2SC2715Y
Q551 2SA1226
CV550:Y READ CLOCK FREQ.
IC750 SN74HC273ANS
IC751 (1/6) SN74HC04ANS
IC752 (1/4) SN74HC00ANS
IC753 (1/4) SN74HC08ANS
IC754 (2/2) SN74HC74ANS
D512 1S2835
TP520 (MTIC)
R522 47k
5V-6
5V-3
5V
AFH
MEMORY WRITE CONTROL

NOTE: <*>:CHANGED PARTS LIST

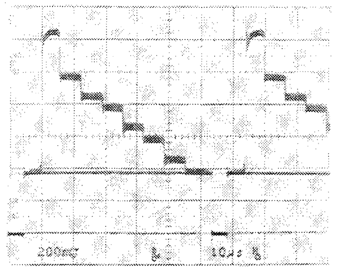
ADDRESS	CHANGE INFORMATION	SERIAL No.
	CHANGED	
J-3	C551 47p → 33p	10131 -
J-3	CV550 20p → 50p	

VM-12P (4/5)

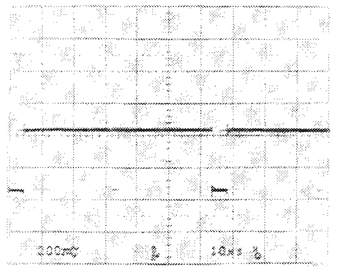
1-641-576-11, 12 (1)
SVO-9500MDP

VM-12P (5/5); CHROMA ENCODER & Y/C D-A CONVERTER

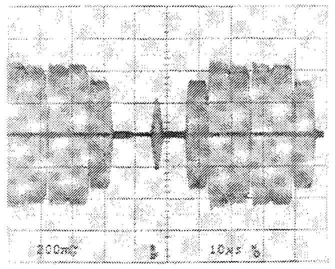
① TP10 (A-1) PB mode



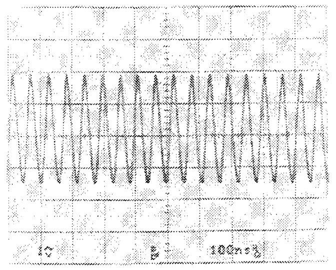
TP10 (A-1) STOP (E-E) mode



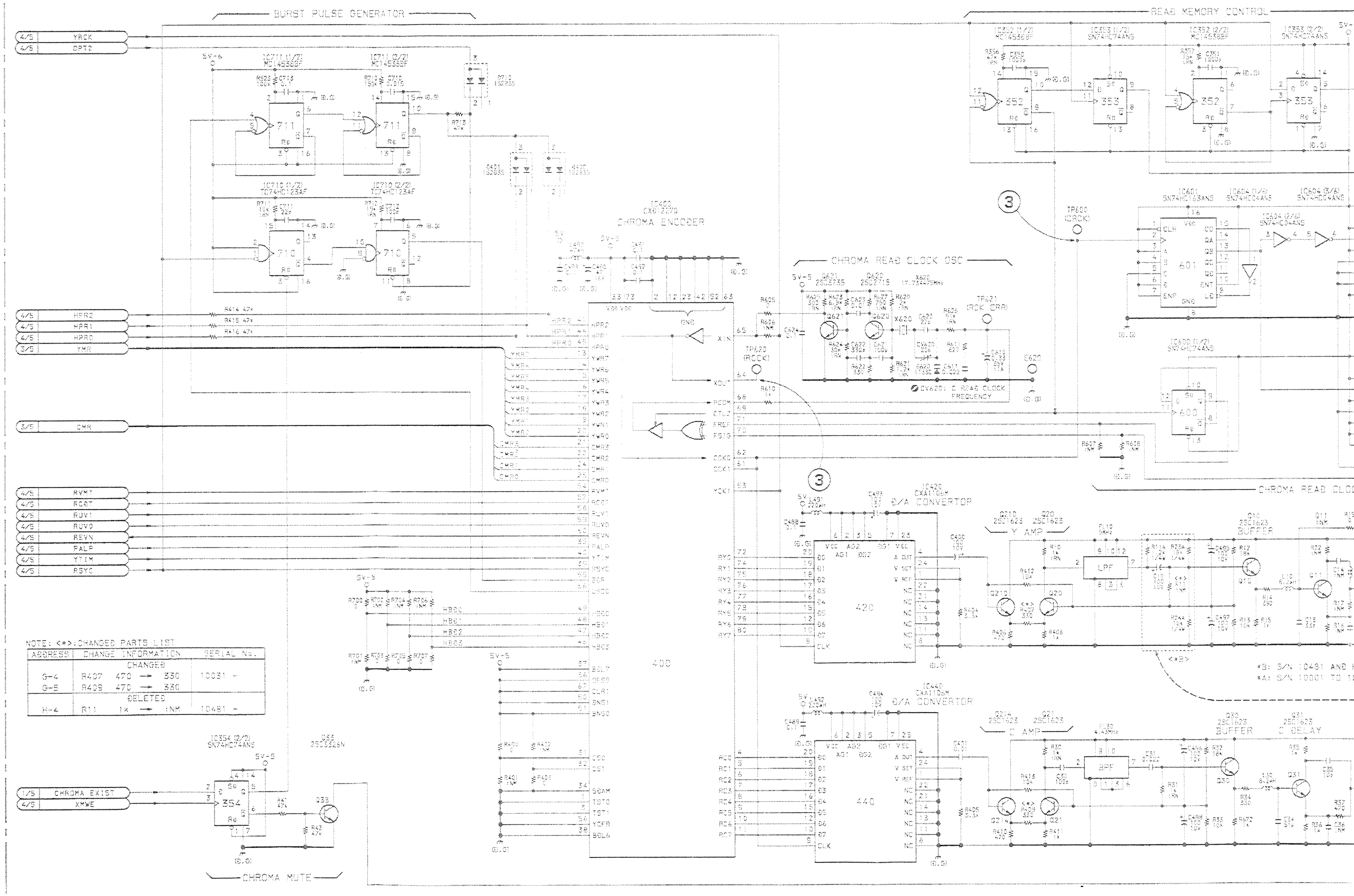
② TP30 (A-1) PB mode



③ TP600 (D-1)
TP620 (C-1)

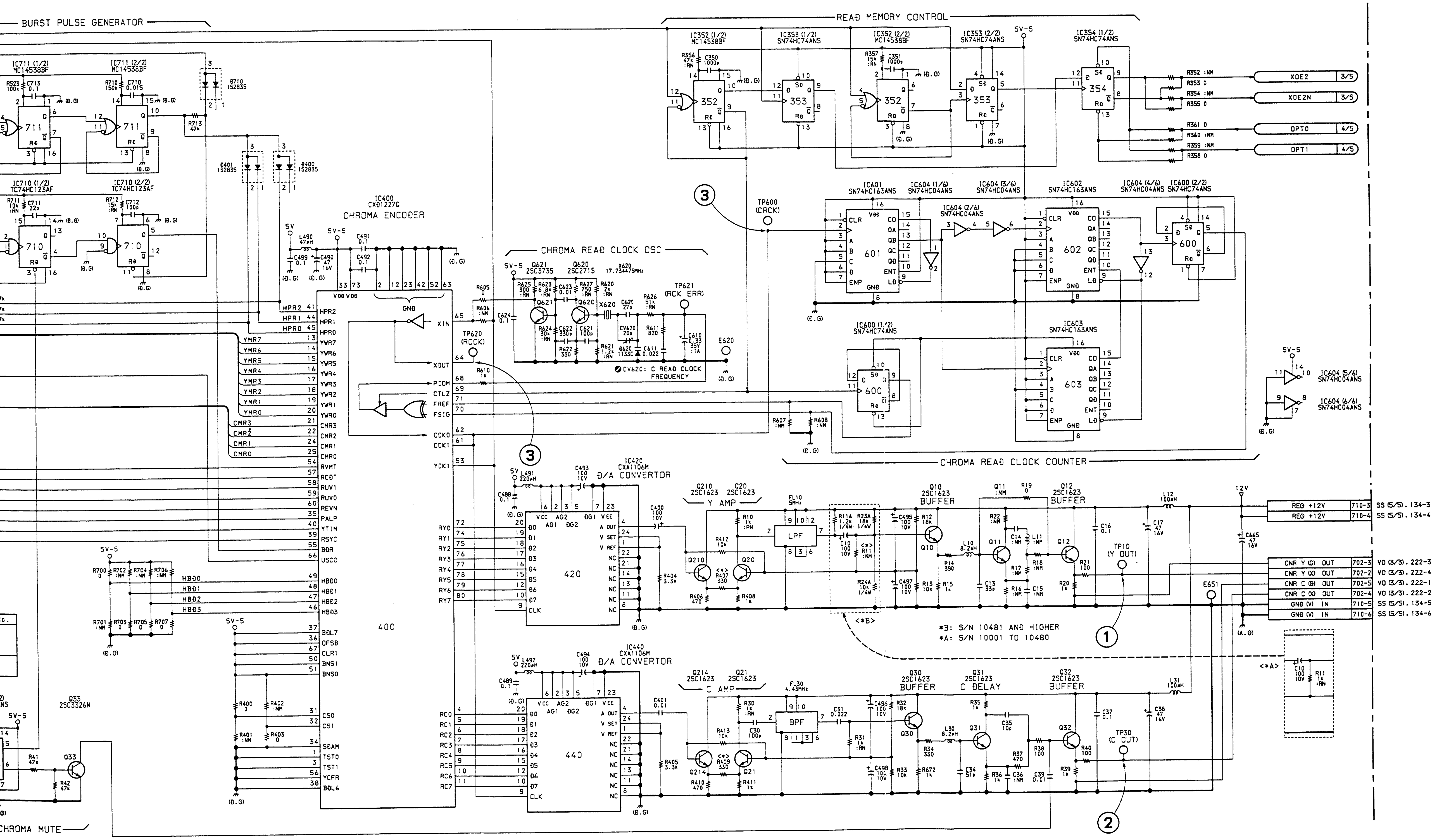


Measurement Condition
PB mode: KRV-45HPS
STOP (E-E) mode: S-VHS


BURST PULSE GENERATOR
READ MEMORY CONTROL
CHROMA ENCODER
IC400 CXD1207Q
CHROMA READ CLOCK OSC
CHROMA READ CLOCK
D/A CONVERTOR
Y AMP
C AMP
LPF
BPF
BUFFER
C DELAY
CHROMA MUTE
YRCK
OPT2
HPR2
HPR1
HPR0
YMR
CMR
RVMT
RCBT
RUV1
RUV2
REVN
PALP
YTIM
RSYC
CHROMA EXIST
XMWE
TP600 (CRCK)
TP620 (RCCK)
TP621 (CK CRR)
③
IC420 CXA1106M
IC440 CXA1106M
IC711 MC14538BF
IC710 TC74HC123AF
IC352 MC14538BF
IC353 SN74HC74ANS
IC601 SN74HC163ANS
IC604 SN74HC04ANS
IC600 SN74HC74ANS
IC354 (2/2) SN74HC74ANS
5V-5
5V-6
(D.G)
X620 17.734475MHz
CX620: C READ CLOCK FREQUENCY
<B>: S/N 10491 AND
<A>: S/N 10001 TO

NOTE: <*>:CHANGED PARTS LIST

ADDRESS	CHANGE INFORMATION	SERIAL No.
	CHANGED	
G-4	R407　470 → 330	10031 ~
G-5	R409　470 → 330	
	DELETED	
H-4	R11　1k → :NM	10491 ~


BURST PULSE GENERATOR
IC711 (1/2) MC14538BF
IC711 (2/2) MC14538BF
IC710 (1/2) TC74HC123AF
IC710 (2/2) TC74HC123AF
D710 1S2835
D401 1S2835
D400 1S2835
IC400 CXD1227Q CHROMA ENCODER
400
CHROMA READ CLOCK OSC
Q621 2SC3735
Q620 2SC2715
X620 17.734475MHz
TP621 (RCK ERR)
TP620 (RCCK)
E620
CV620: C READ CLOCK FREQUENCY
READ MEMORY CONTROL
IC352 (1/2) MC14538BF
IC353 (1/2) SN74HC74ANS
IC352 (2/2) MC14538BF
IC353 (2/2) SN74HC74ANS
IC354 (1/2) SN74HC74ANS
XOE2 3/5
XOE2N 3/5
OPT0 4/5
OPT1 4/5
TP600 (CRCK)
IC601 SN74HC163ANS
IC604 (1/6) SN74HC04ANS
IC604 (2/6) SN74HC04ANS
IC604 (3/6) SN74HC04ANS
IC602 SN74HC163ANS
IC604 (4/6) SN74HC04ANS
IC600 (2/2) SN74HC74ANS
IC600 (1/2) SN74HC74ANS
IC603 SN74HC163ANS
IC604 (5/6) SN74HC04ANS
IC604 (6/6) SN74HC04ANS
CHROMA READ CLOCK COUNTER
IC420 CXA1106M D/A CONVERTOR
420
IC440 CXA1106M D/A CONVERTOR
440
Y AMP
Q210 2SC1623
Q20 2SC1623
LPF
Q10 2SC1623 BUFFER
Q11 :NM
Q12 2SC1623 BUFFER
TP10 (Y OUT)
C AMP
Q214 2SC1623
Q21 2SC1623
BPF
Q30 2SC1623 BUFFER
Q31 2SC1623 C DELAY
Q32 2SC1623 BUFFER
TP30 (C OUT)
E651
REG +12V 710-3 SS (5/5). 134-3
REG +12V 710-4 SS (5/5). 134-4
CNR Y (G) OUT 702-3 VO (3/3). 222-3
CNR Y (X) OUT 702-2 VO (3/3). 222-4
CNR C (G) OUT 702-5 VO (3/3). 222-1
CNR C (X) OUT 702-4 VO (3/3). 222-2
GND (V) IN 710-5 SS (5/5). 134-5
GND (V) IN 710-6 SS (5/5). 134-6
*B: S/N 10481 AND HIGHER
*A: S/N 10001 TO 10480
Q33 2SC3326N
CHROMA MUTE
①
②
③
1
2
3
4
5

VM-12P (5/5)

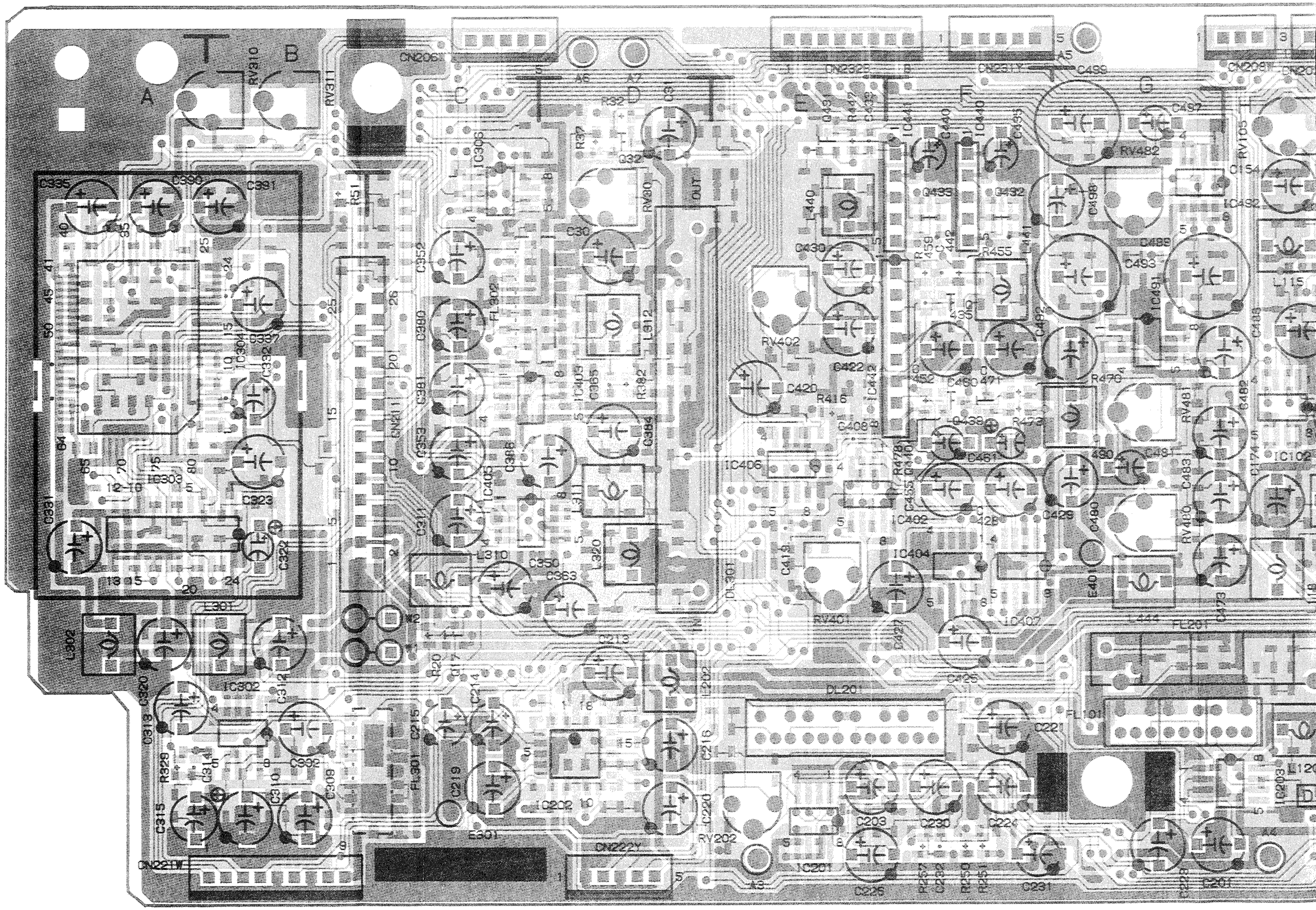
1-641-576-11, 12 (1)
SVO-9500MDP

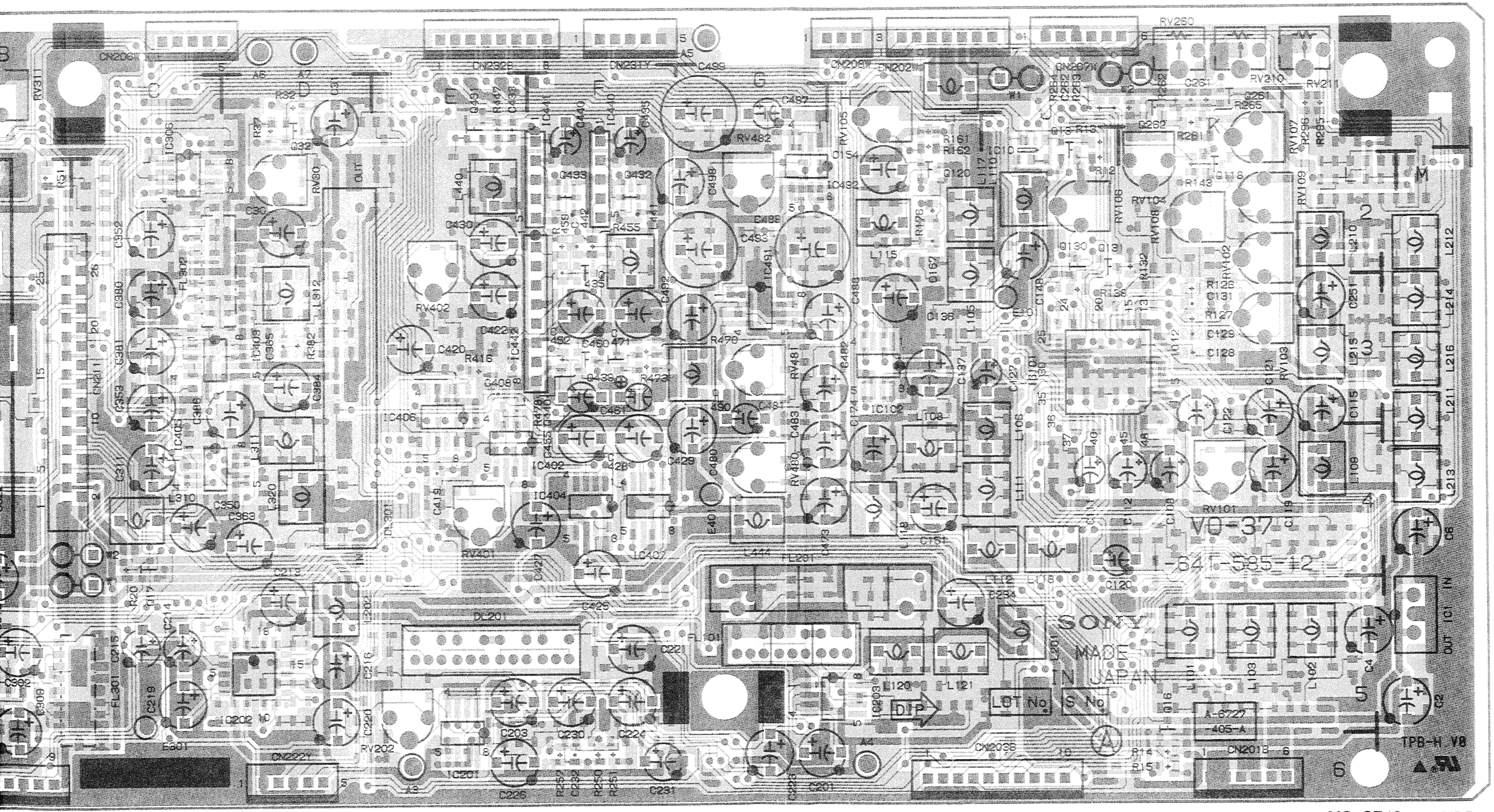
VO-37A ; Y/C VIDEO PROCESS

VO-37A (1-641-585-12)

CN201	K-6
CN202	H-1
CN203	J-6
CN206	C-1
CN207	J-1
CN208	H-1
CN211	C-3
CN221	A-6
CN222	D-6
CN231	F-1
CN232	E-1
DL201	E-5
DL301	E-4
D10	B-3 *
D101	K-4 *
D103	J-3 *
D201	C-5 *
D202	F-5 *
D301	A-3 *
E101	J-3
E301	C-6
E401	G-4
FL101	G-5
FL201	G-4
FL301	C-5
FL302	C-2
IC1	M-5
IC10	J-1
IC101	J-3
IC102	H-3
IC201	E-6
IC202	D-5
IC203	H-5
IC302	B-5
IC303	A-4
IC304	B-3
IC306	C-1
IC402	F-4
IC403	D-3
IC404	F-4
IC405	C-4
IC406	E-3
IC407	F-4
IC440	F-1
IC441	F-1
IC442	E-3
IC491	G-2
IC492	H-2
Q10	J-6 *
Q11	J-1 *
Q12	J-1 *
Q13	J-1
Q14	K-6 *
Q15	K-6 *
Q16	K-5
Q17	C-5
Q19	E-3 *
Q20	A-3 *
Q21	A-3 *
Q22	A-3 *
Q30	D-1 *
Q31	D-1 *
Q32	D-1
Q40	D-1 *
Q41	D-1 *
Q101	L-4 *
Q102	K-4 *
Q103	K-5 *
Q104	K-5 *
Q105	L-5 *
Q106	L-5 *
Q107	K-4 *
Q108	K-5 *
Q109	L-5 *
Q110	L-5 *
Q111	K-3 *
Q112	K-2 *
Q113	K-3 *
Q114	K-2 *
Q116	K-2 *
Q118	K-2
Q119	K-1 *
Q120	H-2
Q121	H-4 *
Q122	H-3 *
Q123	K-5 *
Q124	H-1 *
Q125	H-2 *
Q126	H-2 *
Q128	H-4 *
Q130	J-2
Q131	J-2
Q140	H-5 *
Q141	H-5 *
Q201	C-5 *
Q203	D-5 *
Q204	F-5 *
Q205	F-5 *
Q206	F-6 *
Q207	E-6 *
Q208	G-4 *
Q209	J-5 *
Q210	L-3 *
Q211	L-2 *
Q212	L-1 *
Q213	L-1 *
Q214	M-2 *
Q215	M-2 *
Q216	M-1 *
Q261	K-1
Q262	K-1
Q304	B-5 *
Q305	B-5 *
Q306	A-5 *
Q310	B-4 *
Q311	B-4 *
Q312	A-4 *
Q313	A-3 *
Q314	B-2 *
Q320	D-2 *
Q323	D-3 *
Q324	D-4 *
Q326	D-3 *
Q327	D-2 *
Q328	D-3 *
Q329	D-2 *
Q333	C-2 *
Q334	B-2 *
Q335	C-3 *
Q336	C-3 *
Q337	C-3 *
Q339	B-2 *
Q402	E-4 *
Q420	E-3 *
Q421	E-3 *
Q430	E-2 *
Q431	E-1
Q432	F-2
Q433	F-2
Q434	F-2 *
Q435	F-3
Q438	F-3 *
Q439	F-3
Q440	F-3
Q480	G-3 *
Q481	G-4 *
Q482	G-3 *
Q483	G-3 *
RV30	D-2
RV101	K-4
RV102	K-2
RV103	K-3
RV104	K-2
RV105	H-1
RV106	J-2
RV107	L-1
RV108	K-2
RV109	L-2
RV202	E-5
RV210	K-1
RV211	L-1
RV260	K-1
RV310	B-1
RV311	B-1
RV401	E-4
RV402	E-3
RV480	G-4
RV481	G-3
RV482	G-1
TP101	K-3 *
TP201	E-5 *
TP202	L-1 *
TP203	G-5 *
TP210	J-1 *
TP301	C-5 *
TP302	A-5 *
TP303	D-4 *
TP304	D-2 *
TP491	H-1 *
TP492	G-1 *

* mark ; B SIDE mount


A
B
T
RV310
RV311
CN206
A6
A7
R32
D
C31
R37
Q32
IC306
RV30
OUT
CN232S
CN231Y
A5
C499
CN209
E
F
G
C497
RV482
RV105
C154
IC492
C335
C390
C391
IC304
IC303
C331
C332
C337
C323
C322
R51
C352
CN211
C390
C381
C353
C311
FL302
L312
C30
IC405
C365
R382
C384
C386
L311
L320
L310
C350
C363
DL301
L440
Q433
Q432
C430
R455
C441
C498
C488
C493
C491
C489
L115
RV402
C422
C420
R416
C408
IC442
C450
R473
R470
RV481
C482
IC406
C461
C455
IC402
C429
C480
C481
C483
IC102
IC404
RV401
E401
RV480
C413
IC407
L441
FL201
C473
L302
L301
C320
IC302
C312
C318
R329
C314
C315
C310
C309
C302
FL301
C215
C219
C214
Q17
R20
C213
IC202
E202
C216
C220
RV202
DL201
C221
C425
FL101
L120
IC203
C203
C230
C224
CN221W
E301
CN222Y
A3
IC201
C225
R252
C282
R250
R251
C231
C228
C201
A4


VO-37
1-641-585-12
SONY
MADE
IN JAPAN
LOT No.
S No.
DIP
A-6727
-405-A
TPB-H V8
DL201
FL201
FL101
CN2222
CN2038
CN2018
CN2061
CN2328
CN2317
CN2061
CN2202
RV401
RV402
RV202
RV101
IC1
IN
OUT

VO-37/A — A SIDE —

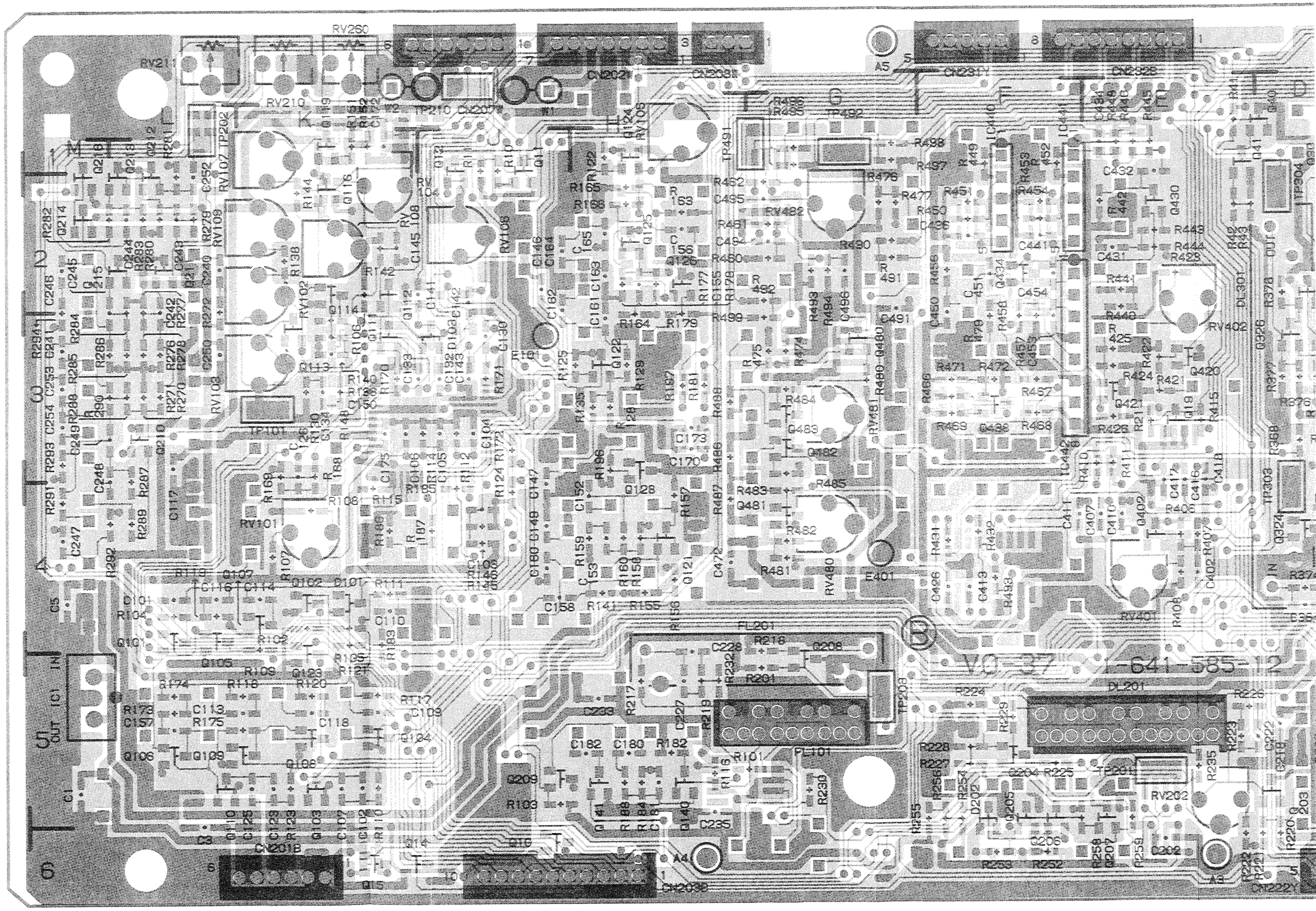
1-641-585-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

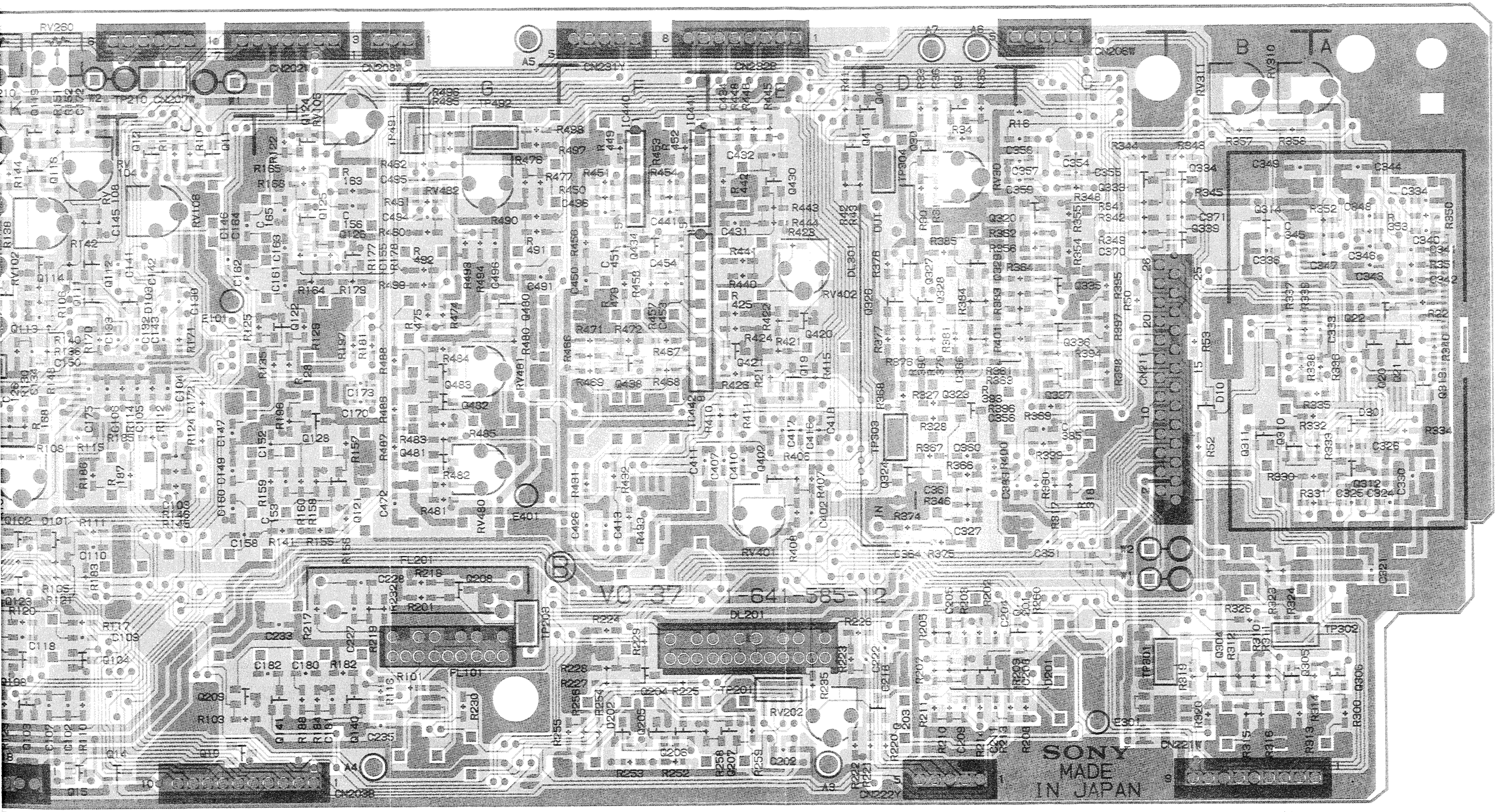
VO-37A ; Y/C VIDEO PROCESS

VO-37A (1-641-585-12)

CN201	K-6
CN202	H-1
CN203	J-6
CN206	C-1
CN207	J-1
CN208	H-1
CN211	C-3
CN221	A-6
CN222	D-6
CN231	F-1
CN232	E-1
DL201	E-5
DL301	E-4
D10	B-3 *
D101	K-4 *
D103	J-3 *
D201	C-5 *
D202	F-5 *
D301	A-3 *
E101	J-3
E301	C-6
E401	G-4
FL101	G-5
FL201	G-4
FL301	C-5
FL302	C-2
IC1	M-5
IC10	J-1
IC101	J-3
IC102	H-3
IC201	E-6
IC202	D-5
IC203	H-5
IC302	B-5
IC303	A-4
IC304	B-3
IC306	C-1
IC402	F-4
IC403	D-3
IC404	F-4
IC405	C-4
IC406	E-3
IC407	F-4
IC440	F-1
IC441	F-1
IC442	E-3
IC491	G-2
IC492	H-2
Q10	J-6 *
Q11	J-1 *
Q12	J-1 *
Q13	J-1
Q14	K-6 *
Q15	K-6 *
Q16	K-5
Q17	C-5
Q19	E-3 *
Q20	A-3 *
Q21	A-3 *
Q22	A-3 *
Q30	D-1 *
Q31	D-1 *
Q32	D-1
Q40	D-1 *
Q41	D-1 *
Q101	L-4 *
Q102	K-4 *
Q103	K-5 *
Q104	K-5 *
Q105	L-5 *
Q106	L-5 *
Q107	K-4 *
Q108	K-5 *
Q109	L-5 *
Q110	L-5 *
Q111	K-3 *
Q112	K-2 *
Q113	K-3 *
Q114	K-2 *
Q116	K-2 *
Q118	K-2
Q119	K-1 *
Q120	H-2
Q121	H-4 *
Q122	H-3 *
Q123	K-5 *
Q124	H-1 *
Q125	H-2 *
Q126	H-2 *
Q128	H-4 *
Q130	J-2
Q131	J-2
Q140	H-5 *
Q141	H-5 *
Q201	C-5 *
Q203	D-5 *
Q204	F-5 *
Q205	F-5 *
Q206	F-6 *
Q207	E-6 *
Q208	G-4 *
Q209	J-5 *
Q210	L-3 *
Q211	L-2 *
Q212	L-1 *
Q213	L-1 *
Q214	M-2 *
Q215	M-2 *
Q216	M-1 *
Q261	K-1
Q262	K-1
Q304	B-5 *
Q305	B-5 *
Q306	A-5 *
Q310	B-4 *
Q311	B-4 *
Q312	A-4 *
Q313	A-3 *
Q314	B-2 *
Q320	D-2 *
Q323	D-3 *
Q324	D-4 *
Q326	D-3 *
Q327	D-2 *
Q328	D-3 *
Q329	D-2 *
Q333	C-2 *
Q334	B-2 *
Q335	C-3 *
Q336	C-3 *
Q337	C-3 *
Q339	B-2 *
Q402	E-4 *
Q420	E-3 *
Q421	E-3 *
Q430	E-2 *
Q431	E-1
Q432	F-2
Q433	F-2
Q434	F-2 *
Q435	F-3
Q438	F-3 *
Q439	F-3
Q440	F-3
Q480	G-3 *
Q481	G-4 *
Q482	G-3 *
Q483	G-3 *
RV30	D-2
RV101	K-4
RV102	K-2
RV103	K-3
RV104	K-2
RV105	H-1
RV106	J-2
RV107	L-1
RV108	K-2
RV109	L-2
RV202	E-5
RV210	K-1
RV211	L-1
RV260	K-1
RV310	B-1
RV311	B-1
RV401	E-4
RV402	E-3
RV480	G-4
RV481	G-3
RV482	G-1
TP101	K-3 *
TP201	E-5 *
TP202	L-1 *
TP203	G-5 *
TP210	J-1 *
TP301	C-5 *
TP302	A-5 *
TP303	D-4 *
TP304	D-2 *
TP491	H-1 *
TP492	G-1 *

* mark ; B SIDE mount

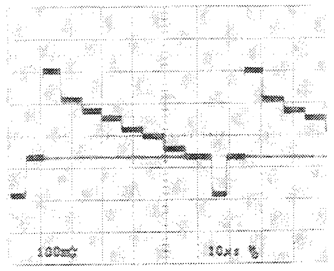



VO-37 1-641-585-12
SONY
MADE IN JAPAN
CN202W
CN203W
CN231Y
CN232B
CN206W
CN211
CN208B
CN222Y
CN221W
DL201
DL301
FL201
PL101
RV401
RV402
RV480
RV482
RV202
TP302
TP301
TP303
TP304
TP201
TP208
E401
E301
A3
A4
A5
A6
A7

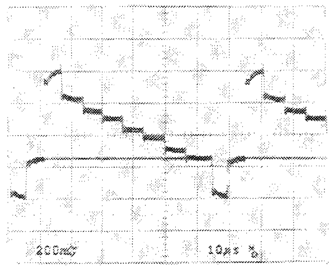
VO-37/A — B SIDE —
1-641-585-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

VO-37A (1/3); Y PROCESS

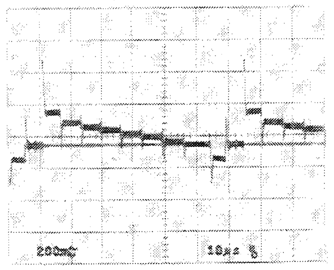
① TP203 (G-5*) STOP (E-E) mode



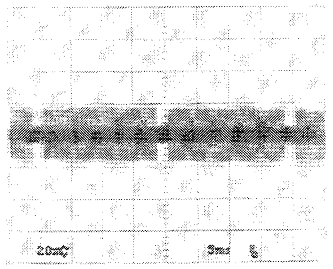
② TP201 (E-5*) STOP (E-E) mode



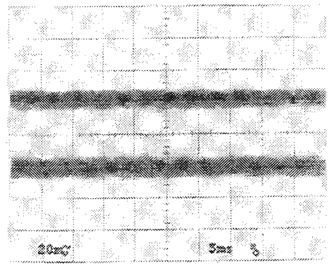
③ TP101 (K-3*) STOP (E-E) mode



④ TP210 (J-1*) STOP (E-E) mode

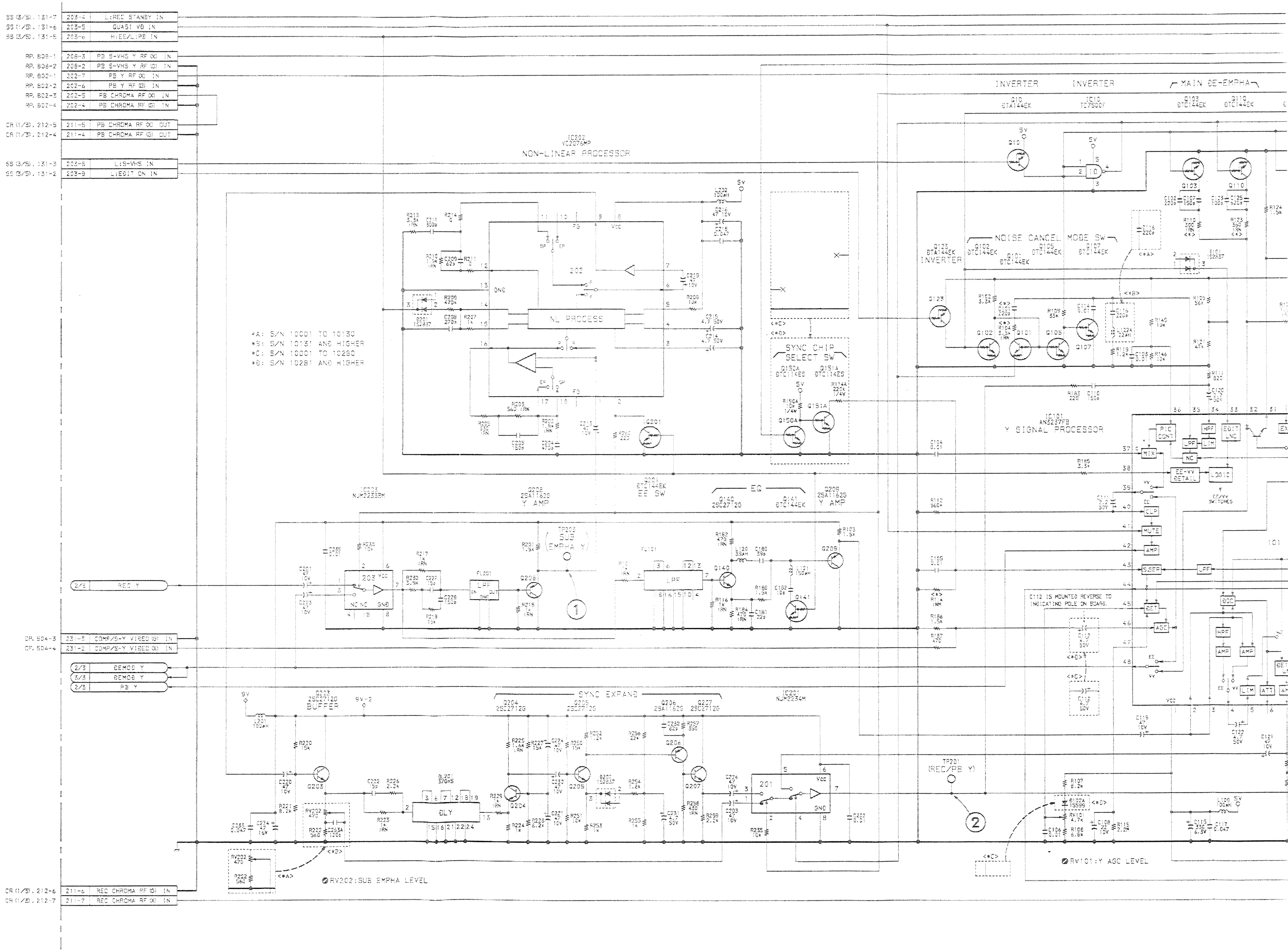


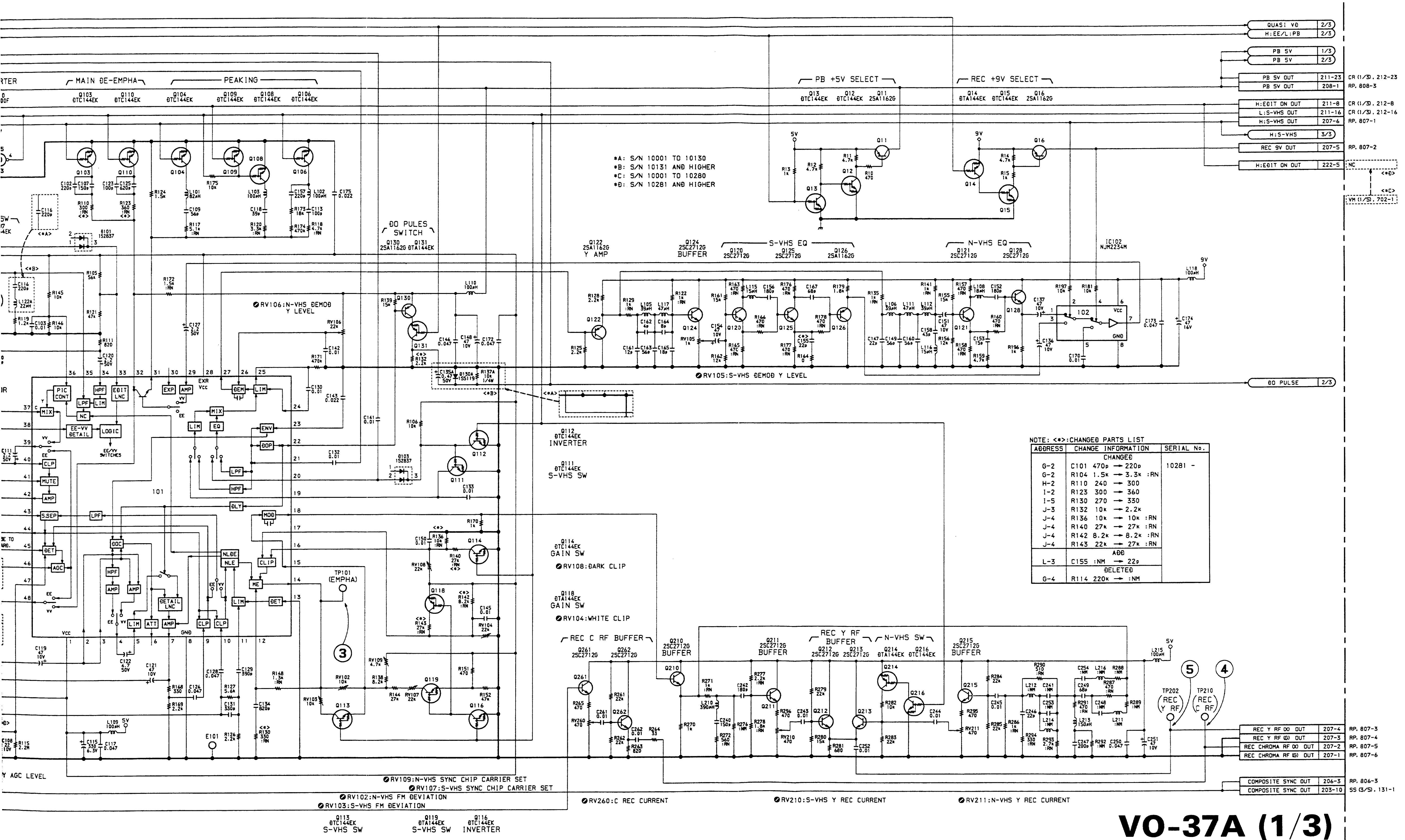
⑤ TP202 (L-1*) STOP (E-E) mode



Measurement Condition
S-VIDEO IN: 75% color bars
STOP (E-E) mode: S-VHS

* mark; B SIDE mount


SS (3/5), 131-7
203-4
L:REC STANBY IN
SS (1/5), 131-6
203-5
QUASI VD IN
SS (3/5), 131-5
203-6
H:EE/L:PB IN
RP, 808-1
208-3
PB S-VHS Y RF (X) IN
RP, 808-2
208-2
PB S-VHS Y RF (G) IN
RP, 802-1
202-7
PB Y RF (X) IN
RP, 802-2
202-6
PB Y RF (G) IN
RP, 802-3
202-5
PB CHROMA RF (X) IN
RP, 802-4
202-4
PB CHROMA RF (G) IN
CR (1/3), 212-5
211-5
PB CHROMA RF (X) OUT
CR (1/3), 212-4
211-4
PB CHROMA RF (G) OUT
SS (3/5), 131-3
203-8
L:S-VHS IN
SS (3/5), 131-2
203-9
L:EDIT ON IN
IC202
VC2076*P
NON-LINEAR PROCESSOR
NL PROCESS
*A: S/N 10001 TO 10130
*B: S/N 10131 AND HIGHER
*C: S/N 10001 TO 10280
*D: S/N 10281 AND HIGHER
SYNC CHIP SELECT SW
INVERTER
INVERTER
MAIN DE-EMPHA
Q10
DTA144EK
IC10
TC7S00F
Q103
DTC144EK
Q110
DTC144EK
NOISE CANCEL MODE SW
Q123
DTA144EK
INVERTER
Q102
DTC144EK
Q101
DTC144EK
Q105
DTC144EK
Q107
DTC144EK
IC101
AN3237FB
Y SIGNAL PROCESSOR
PIC CONT
HPF
EDIT LNC
LPF
LIM
MIX
NC
EE-VV DETAIL
LOGIC
CLP
MUTE
AMP
S.SEP
DET
AGC
LPF
OSC
HPF
AMP
AMP
LIM
ATT
EE/VV SWITCHES
C112 IS MOUNTED REVERSE TO INDICATING POLE ON BOARD.
IC203
NJM2233BM
Q208
2SA1162G
Y AMP
Q201
DTC144EK
EE SW
EQ
Q140
2SC2712G
Q141
DTC144EK
Q209
2SA1162G
Y AMP
TP202
SUB EMPHA Y
①
FL201
LPF
FL101
LPF
2/3
REC Y
CP, 504-3
231-1
COMP/S-Y VIDEO (G) IN
CP, 504-4
231-2
COMP/S-Y VIDEO (X) IN
2/3
DEMOD Y
3/3
DEMOD Y
2/3
PB Y
Q203
2SC2712G
BUFFER
SYNC EXPAND
Q204
2SC2712G
Q205
2SC2712G
Q206
2SA1162G
Q207
2SC2712G
IC201
NJM2234M
DL201
DLY
TP201
(REC/PB Y)
②
RV202: SUB EMPHA LEVEL
RV101: Y AGC LEVEL
CR (1/3), 212-6
211-6
REC CHROMA RF (G) IN
CR (1/3), 212-7
211-7
REC CHROMA RF (X) IN


MAIN DE-EMPHA
PEAKING
PB +5V SELECT
REC +9V SELECT
*A: S/N 10001 TO 10130
*B: S/N 10131 AND HIGHER
*C: S/N 10001 TO 10280
*D: S/N 10281 AND HIGHER
DD PULES SWITCH
Q122 2SA1162G Y AMP
Q124 2SC2712G BUFFER
S-VHS EQ
N-VHS EQ
IC102 NJM2234M
RV106:N-VHS DEMOD Y LEVEL
RV105:S-VHS DEMOD Y LEVEL
Q112 DTC144EK INVERTER
Q111 DTC144EK S-VHS SW
Q114 DTC144EK GAIN SW
RV108:DARK CLIP
Q118 DTA144EK GAIN SW
RV104:WHITE CLIP
TP101 (EMPHA)
REC C RF BUFFER
REC Y RF BUFFER
N-VHS SW
TP202 (REC Y RF)
TP210 (REC C RF)
QUASI VD 2/3
H:EE/L:PB 2/3
PB 5V 1/3
PB 5V 2/3
PB 5V OUT 211-23 CR (1/3). 212-23
PB 5V OUT 208-1 RP. 808-3
H:EDIT ON OUT 211-8 CR (1/3). 212-8
L:S-VHS OUT 211-16 CR (1/3). 212-16
H:S-VHS OUT 207-6 RP. 807-1
H:S-VHS 3/3
REC 9V OUT 207-5 RP. 807-2
H:EDIT ON OUT 222-5 NC
VH (1/3). 702-1
DD PULSE 2/3
REC Y RF (D) OUT 207-4 RP. 807-3
REC Y RF (G) OUT 207-3 RP. 807-4
REC CHROMA RF (D) OUT 207-2 RP. 807-5
REC CHROMA RF (G) OUT 207-1 RP. 807-6
COMPOSITE SYNC OUT 206-3 RP. 806-3
COMPOSITE SYNC OUT 203-10 SS (3/3). 131-1
RV109:N-VHS SYNC CHIP CARRIER SET
RV107:S-VHS SYNC CHIP CARRIER SET
RV102:N-VHS FM DEVIATION
RV103:S-VHS FM DEVIATION
RV260:C REC CURRENT
RV210:S-VHS Y REC CURRENT
RV211:N-VHS Y REC CURRENT
Q113 DTC144EK S-VHS SW
Q119 DTA144EK S-VHS SW
Q116 DTC144EK INVERTER
Y AGC LEVEL
1
2
3
4
5

NOTE: <*>:CHANGED PARTS LIST

ADDRESS	CHANGE INFORMATION	SERIAL No.
	CHANGED	
G-2	C101 470p → 220p	10281 -
G-2	R104 1.5k → 3.3k :RN	
H-2	R110 240 → 300	
I-2	R123 300 → 360	
I-5	R130 270 → 330	
J-3	R132 10k → 2.2k	
J-4	R136 10k → 10k :RN	
J-4	R140 27k → 27k :RN	
J-4	R142 8.2k → 8.2k :RN	
J-4	R143 22k → 27k :RN	
	ADD	
L-3	C155 :NM → 22p	
	DELETED	
G-4	R114 220k → :NM	

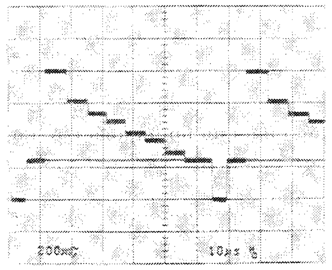
VO-37A (1/3)

1-641-585-12 (1)
SVO-9500MDP

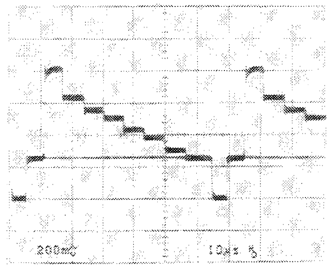
VO-37A (2/3)

VO-37A (2/3) ; DIGITAL COMB FILTER & PB Y/C OUTPUT

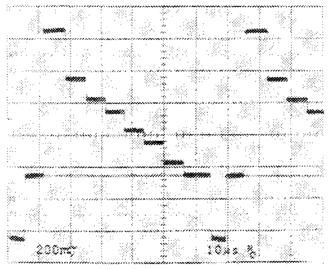
① TP301 (C-5*) STOP (E-E) mode



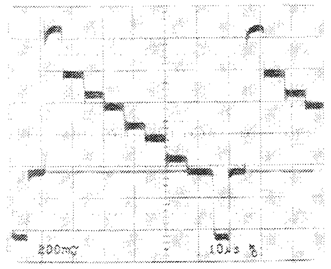
TP301 (C-5*) PB mode



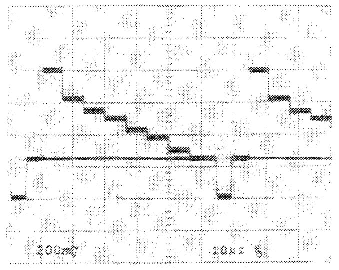
② TP302 (A-5*) STOP (E-E) mode



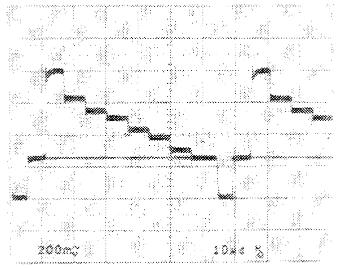
TP302 (A-5*) PB mode



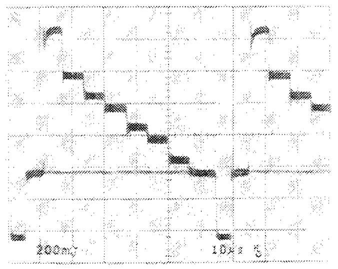
③ TP303 (D-4*) STOP (E-E) mode



TP303 (D-4*) PB mode

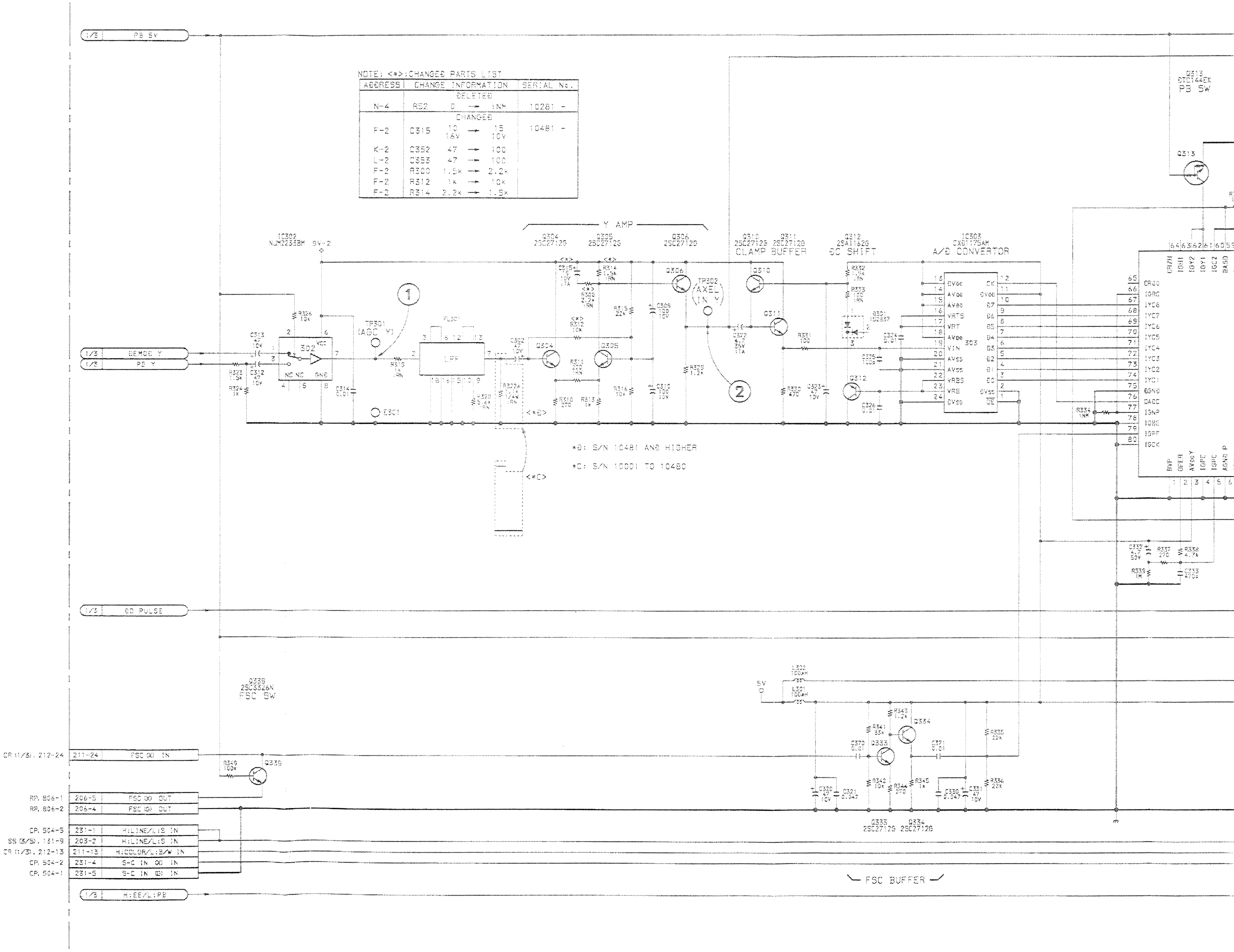


④ TP304 (D-2*) PB mode



Measurement Condition
S-VIDEO IN: 75% color bars
STOP (E-E) mode: S-VHS
PB mode: KRV-45HPS

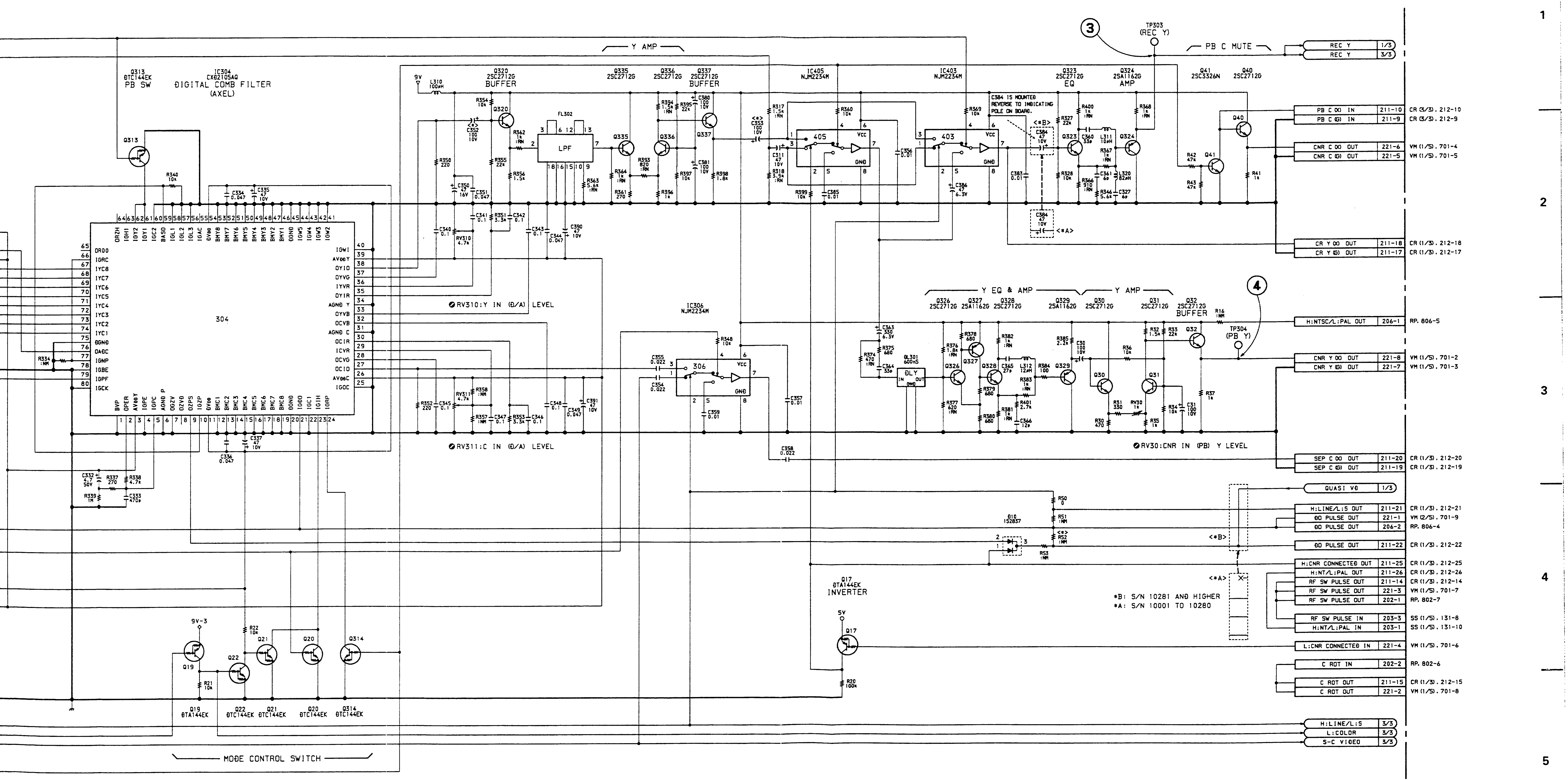
* mark: B SIDE mount


1/3 PB 5V
1/3 DEMOD Y
1/3 PB Y
1/3 SD PULSE
1/3 H:EE/L:PB
IC302 NJM2233BM
TP301 (AGC Y)
FL301 LPF
Y AMP
Q304 2SC2712G
Q305 2SC2712G
Q306 2SC2712G
TP302 (AXEL) (IN Y)
Q310 2SC2712G
Q311 2SC2712G
CLAMP BUFFER
Q312 2SA1162G
DC SHIFT
IC303 CXD1175AM
A/D CONVERTOR
Q313 DTC144EK
PB SW
Q339 2SC3326N
FSC SW
Q333 2SC2712G
Q334 2SC2712G
FSC BUFFER
*B: S/N 10481 AND HIGHER
*C: S/N 10001 TO 10480
211-24 FSC (X) IN
206-5 FSC (X) OUT
206-4 FSC (G) OUT
231-1 H:LINE/L:S IN
203-2 H:LINE/L:S IN
211-13 H:COLOR/L:B/W IN
231-4 S-C IN (X) IN
231-5 S-C IN (G) IN
① ②

NOTE; <*>:CHANGED PARTS LIST

ADDRESS	CHANGE INFORMATION	SERIAL No.
	DELETED	
N-4	R52 0 → :NM	10281 ~
	CHANGED	
F-2	C315 10 16V → 15 10V	10481 ~
K-2	C352 47 → 100	
L-2	C353 47 → 100	
F-2	R300 1.5k → 2.2k	
F-2	R312 1k → 10k	
F-2	R314 2.2k → 1.5k	

13-29


Q313 DTC144EK PB SW
IC304 CXD2105AQ DIGITAL COMB FILTER (AXEL)
304
Y AMP
Q320 2SC2712G BUFFER
FL302 LPF
Q335 2SC2712G
Q336 2SC2712G
Q337 2SC2712G BUFFER
IC405 NJM2234M
IC403 NJM2234M
405
403
C384 IS MOUNTED REVERSE TO INDICATING POLE ON BOARD.
Q323 2SC2712G EQ
Q324 2SA1162G AMP
TP303 (REC Y)
③
PB C MUTE
Q41 2SC3326N
Q40 2SC2712G
RV310:Y IN (D/A) LEVEL
RV311:C IN (D/A) LEVEL
IC306 NJM2234M
306
Y EQ & AMP
Q326 2SC2712G
Q327 2SA1162G
Q328 2SC2712G
Q329 2SA1162G
Q30 2SC2712G
Y AMP
Q31 2SC2712G
Q32 2SC2712G BUFFER
DL301 600nS DLY
TP304 (PB Y)
④
RV30:CNR IN (PB) Y LEVEL
D10 1SS237
Q17 DTA144EK INVERTER
*B: S/N 10281 AND HIGHER
*A: S/N 10001 TO 10280
MODE CONTROL SWITCH
Q19 DTA144EK
Q22 DTC144EK
Q21 DTC144EK
Q20 DTC144EK
Q314 DTC144EK
REC Y 1/3
REC Y 3/3
PB C (X) IN 211-10 CR (3/3). 212-10
PB C (G) IN 211-9 CR (3/3). 212-9
CNR C (X) OUT 221-6 VM (1/5). 701-4
CNR C (G) OUT 221-5 VM (1/5). 701-5
CR Y (X) OUT 211-18 CR (1/3). 212-18
CR Y (G) OUT 211-17 CR (1/3). 212-17
H:NTSC/L:PAL OUT 206-1 RP. 806-5
CNR Y (X) OUT 221-8 VM (1/5). 701-2
CNR Y (G) OUT 221-7 VM (1/5). 701-3
SEP C (X) OUT 211-20 CR (1/3). 212-20
SEP C (G) OUT 211-19 CR (1/3). 212-19
QUASI VD 1/3
H:LINE/L:S OUT 211-21 CR (1/3). 212-21
DD PULSE OUT 221-1 VM (2/5). 701-9
DD PULSE OUT 206-2 RP. 806-4
DD PULSE OUT 211-22 CR (1/3). 212-22
H:CNR CONNECTED OUT 211-25 CR (1/3). 212-25
H:NT/L:PAL OUT 211-26 CR (1/3). 212-26
RF SW PULSE OUT 211-14 CR (1/3). 212-14
RF SW PULSE OUT 221-3 VM (1/5). 701-7
RF SW PULSE OUT 202-1 RP. 802-7
RF SW PULSE IN 203-3 SS (1/5). 131-8
H:NT/L:PAL IN 203-1 SS (1/5). 131-10
L:CNR CONNECTED IN 221-4 VM (1/5). 701-6
C ROT IN 202-2 RP. 802-6
C ROT OUT 211-15 CR (1/3). 212-15
C ROT OUT 221-2 VM (1/5). 701-8
H:LINE/L:S 3/3
L:COLOR 3/3
S-C VIDEO 3/3
1
2
3
4
5

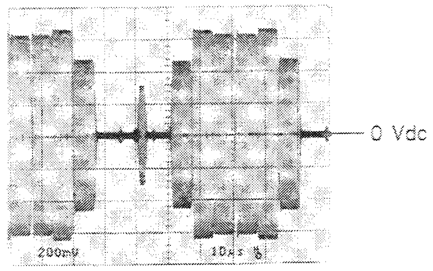
VO-37A (2/3)

1-641-585-12 (1)
SVO-9500MDP

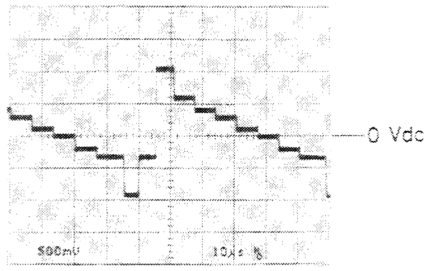
VO-37A (3/3), DUS-592

VO-37A (3/3); Y/C MIX, VIDEO/S-VIDEO OUTPUT
DUS-592

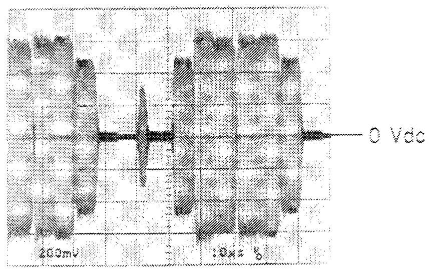
① TP491 (H-1*) STOP (E-E) mode



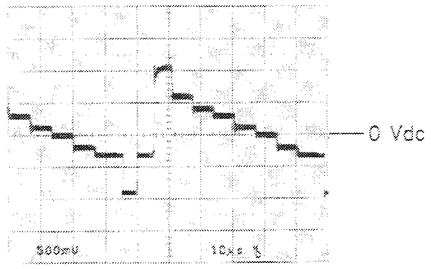
② TP492 (G-1*) STOP (E-E) mode



TP491 (H-1*) PB mode



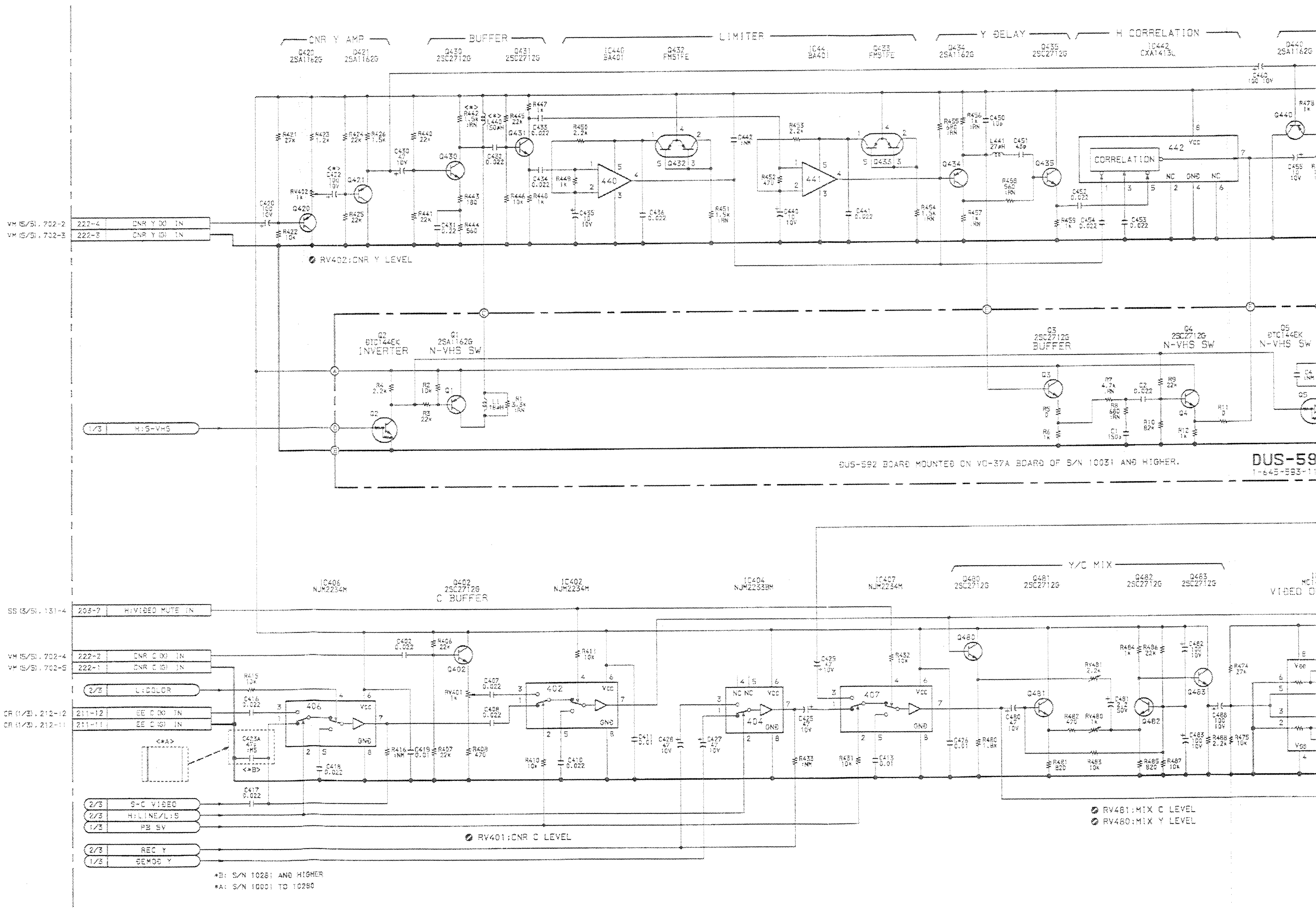
TP492 (G-1*) PB mode



Measurement Condition

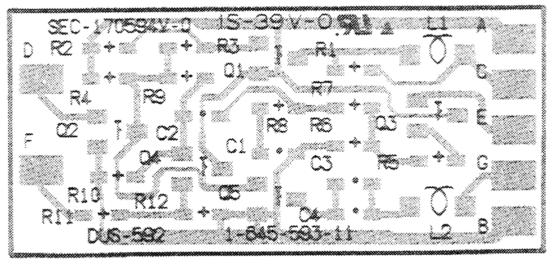
S-VIDEO IN: 75% color bars
STOP (E-E) mode: S-VHS
PB mode: KRV-45HPS

* mark: B SIDE mount

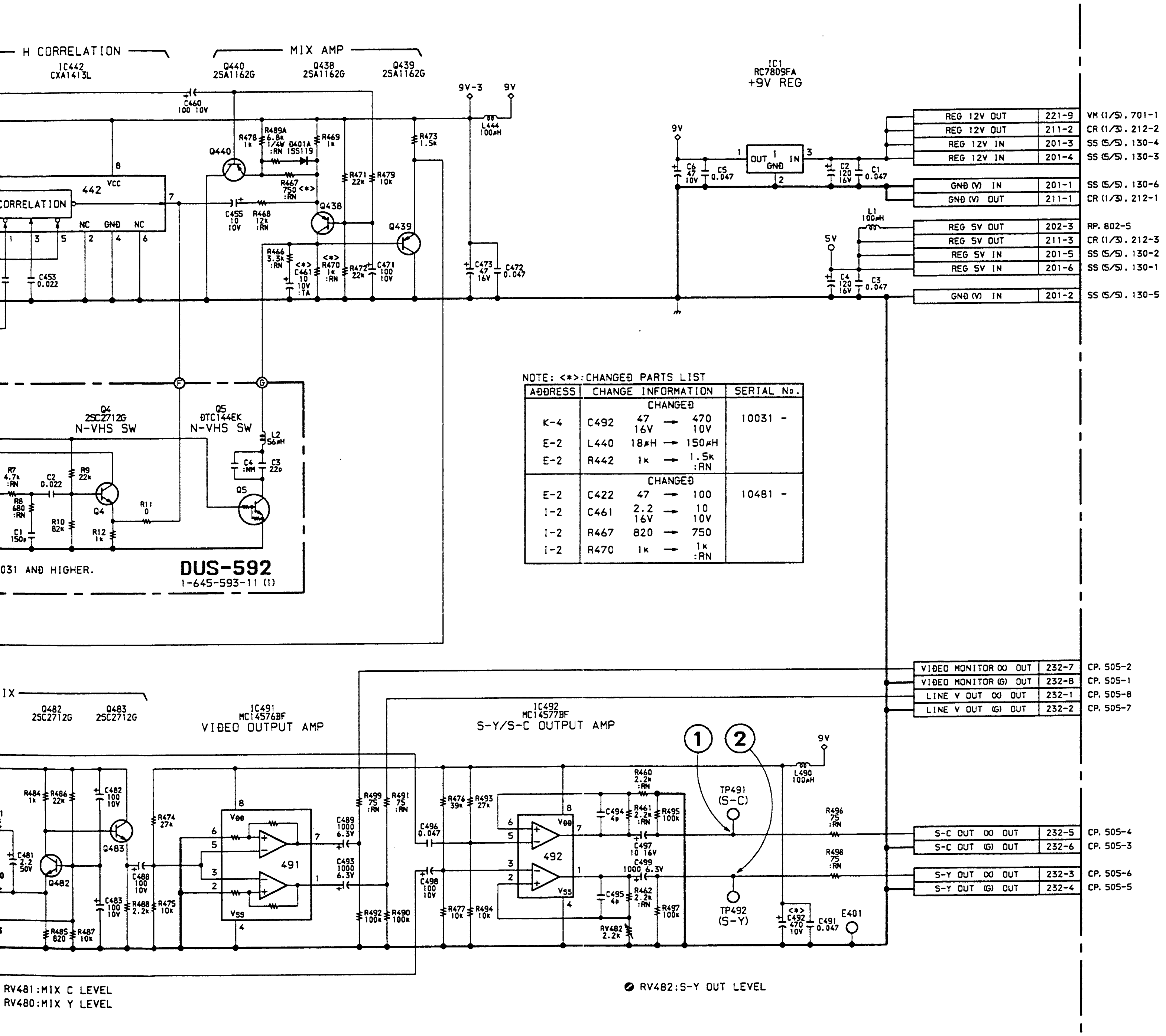

CNR Y AMP
Q420 2SA1162G
Q421 2SA1162G
BUFFER
Q430 2SC2712G
Q431 2SC2712G
LIMITER
IC440 BA401
Q432 FMS1FE
IC441 BA401
Q433 FMS1FE
Y DELAY
Q434 2SA1162G
Q435 2SC2712G
H CORRELATION
IC442 CXA1413L
Q440 2SA1162G
CORRELATION
VM (5/5), 702-2
VM (5/5), 702-3
222-4 CNR Y (X) IN
222-3 CNR Y (G) IN
RV402:CNR Y LEVEL
Q2 DTC144EK INVERTER
Q1 2SA1162G N-VHS SW
Q3 2SC2712G BUFFER
Q4 2SC2712G N-VHS SW
Q5 DTC144EK N-VHS SW
1/3 H:S-VHS
DUS-59
SS (3/5), 131-4
203-7 H:VIDEO MUTE IN
VM (5/5), 702-4
VM (5/5), 702-5
222-2 CNR C (X) IN
222-1 CNR C (G) IN
2/3 L:COLOR
CR (1/3), 212-12
CR (1/3), 212-11
211-12 EE C (X) IN
211-11 EE C (G) IN
IC406 NJM2234M
Q402 2SC2712G C BUFFER
IC402 NJM2234M
IC404 NJM2233M
IC407 NJM2234M
Y/C MIX
Q480 2SC2712G
Q481 2SC2712G
Q482 2SC2712G
Q483 2SC2712G
VIDEO O
2/3 S-C VIDEO
2/3 H:LINE/L:S
1/3 PB 5V
2/3 REC Y
1/3 DEMOD Y
RV401:CNR C LEVEL
RV481:MIX C LEVEL
RV480:MIX Y LEVEL

DUS-592 BOARD MOUNTED ON VO-37A BOARD OF S/N 10031 AND HIGHER.

*B: S/N 10281 AND HIGHER
*A: S/N 10001 TO 10280


SEC-170594V-0 1S-39V-0
D
F
A
C
E
G
B
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
Q1
Q2
Q3
Q4
Q5
C1
C2
C3
C4
C5
L1
L2
DUS-592 1-645-593-11

DUS-592 — COMPONENT SIDE —
1-645-593-11 (1)
SVO-9500MDP


H CORRELATION
IC442
CXA1413L
MIX AMP
Q440
2SA1162G
Q438
2SA1162G
Q439
2SA1162G
IC1
RC7809FA
+9V REG
9V-3
9V
5V
REG 12V OUT 221-9 VM (1/5). 701-1
REG 12V OUT 211-2 CR (1/3). 212-2
REG 12V IN 201-3 SS (5/5). 130-4
REG 12V IN 201-4 SS (5/5). 130-3
GND (V) IN 201-1 SS (5/5). 130-6
GND (V) OUT 211-1 CR (1/3). 212-1
REG 5V OUT 202-3 RP. 802-5
REG 5V OUT 211-3 CR (1/3). 212-3
REG 5V IN 201-5 SS (5/5). 130-2
REG 5V IN 201-6 SS (5/5). 130-1
GND (V) IN 201-2 SS (5/5). 130-5
CORRELATION
Q4
2SC2712G
N-VHS SW
Q5
DTC144EK
N-VHS SW
031 AND HIGHER.
DUS-592
1-645-593-11 (1)
Q482
2SC2712G
Q483
2SC2712G
IC491
MC14576BF
VIDEO OUTPUT AMP
IC492
MC14577BF
S-Y/S-C OUTPUT AMP
①
②
TP491
(S-C)
TP492
(S-Y)
E401
VIDEO MONITOR (X) OUT 232-7 CP. 505-2
VIDEO MONITOR (G) OUT 232-8 CP. 505-1
LINE V OUT (X) OUT 232-1 CP. 505-8
LINE V OUT (G) OUT 232-2 CP. 505-7
S-C OUT (X) OUT 232-5 CP. 505-4
S-C OUT (G) OUT 232-6 CP. 505-3
S-Y OUT (X) OUT 232-3 CP. 505-6
S-Y OUT (G) OUT 232-4 CP. 505-5
RV481:MIX C LEVEL
RV480:MIX Y LEVEL
RV482:S-Y OUT LEVEL

NOTE: <*>:CHANGED PARTS LIST

ADDRESS	CHANGE INFORMATION	SERIAL No.
	CHANGED	
K-4	C492 47 16V → 470 10V	10031 -
E-2	L440 18μH → 150μH	
E-2	R442 1k → 1.5k :RN	
	CHANGED	
E-2	C422 47 → 100	10481 -
I-2	C461 2.2 16V → 10 10V	
I-2	R467 820 → 750	
I-2	R470 1k → 1k :RN	

VO-37A (3/3)

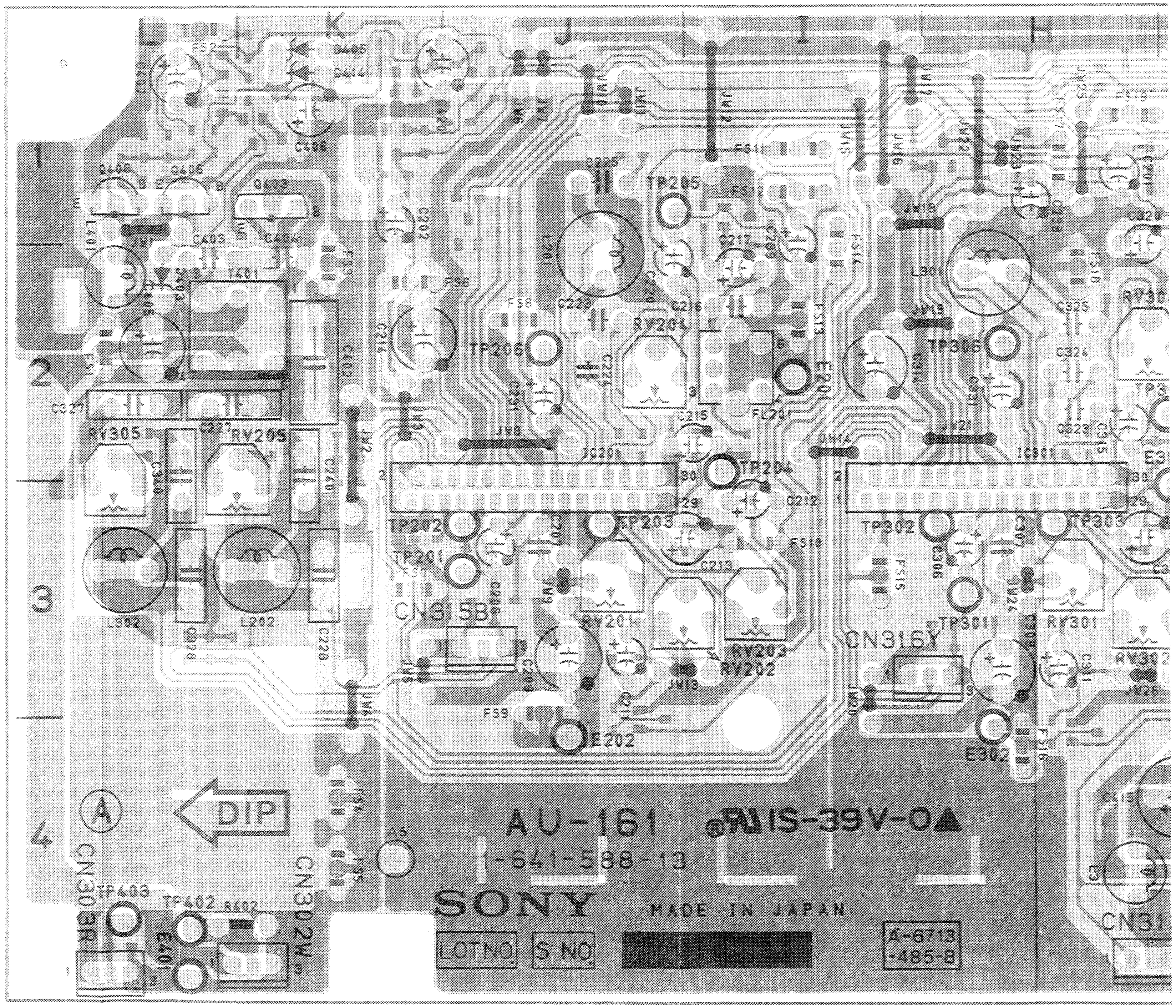
1-641-585-12 (1)
SVO-9500MDP

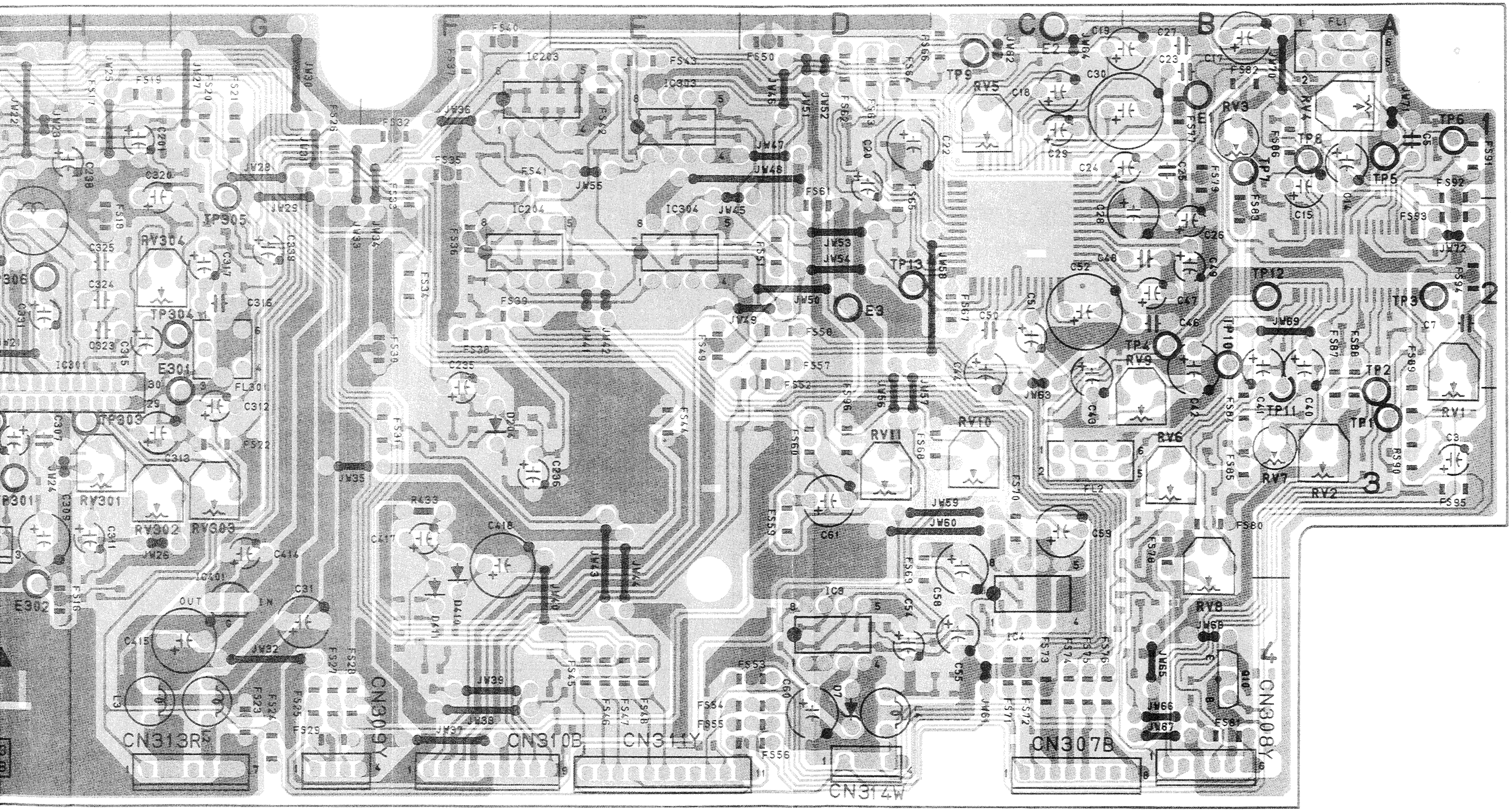
AU-161A ; AFM PROCESS/NORMAL AUDIO PROCESS

AU-161A (1-641-588-13)

∗ mark ; B SIDE mount

CN302	K-4	Q212	F-3 ∗
CN303	L-4	Q213	E-3 ∗
CN307	C-4	Q303	H-4 ∗
CN308	B-4	Q307	G-2 ∗
CN309	F-4	Q312	K-1 ∗
CN310	F-4	Q313	E-4 ∗
CN311	E-4	Q314	F-4 ∗
CN313	H-4	Q403	K-1
CN314	D-4	Q404	K-1 ∗
CN315	K-3	Q406	L-1
CN316	I-3	Q407	K-1 ∗
		Q408	L-1
D2	A-3 ∗	Q409	L-1 ∗
D5	B-4 ∗	Q414	H-1 ∗
D6	D-4 ∗	Q416	F-4 ∗
D7	D-4	Q422	F-4 ∗
D8	D-2 ∗		
D201	K-1 ∗	RV1	A-3
D202	I-2 ∗	RV2	A-3
D203	J-1 ∗	RV3	B-1
D204	F-3	RV4	B-1
D302	H-1 ∗	RV5	C-1
D303	F-4 ∗	RV6	B-3
D403	L-2	RV7	B-3
D404	K-1 ∗	RV8	B-4
D405	K-1	RV9	B-2
D406	L-1 ∗	RV10	C-3
D409	F-4 ∗	RV11	D-3
D410	F-4	RV201	J-3
D411	F-4	RV202	I-3
		RV203	I-3
E1	B-1	RV204	J-2
E2	C-1	RV205	L-2
E3	D-2	RV301	H-3
E201	I-2	RV302	H-3
E202	J-4	RV303	G-3
E301	H-2	RV304	H-2
E302	H-4	RV305	L-2
E401	L-4		
		TP1	A-3
FL1	A-1	TP2	A-3
FL2	C-3	TP3	A-2
FL201	I-2	TP4	B-2
FL301	G-3	TP5	A-1
		TP6	A-1
IC1	A-2 ∗	TP7	B-1
IC2	C-2 ∗	TP8	B-1
IC3	D-4	TP9	C-1
IC4	C-4	TP10	B-2
IC5	D-1 ∗	TP11	B-3
IC201	J-2	TP12	B-2
IC203	F-1	TP13	D-2
IC204	F-2	TP201	K-3
IC301	H-2	TP202	K-3
IC303	E-1	TP203	J-3
IC304	E-2	TP204	I-2
IC401	G-4	TP205	J-1
		TP206	J-2
Q5	E-4 ∗	TP301	H-3
Q8	B-4 ∗	TP302	I-3
Q10	B-4	TP303	H-3
Q12	C-3 ∗	TP304	H-2
Q13	C-3 ∗	TP305	G-2
Q14	A-1 ∗	TP306	H-2
Q15	B-3 ∗	TP402	L-4
Q201	H-1 ∗	TP403	L-4
Q203	J-4 ∗		
Q207	I-1 ∗	T401	L-3
Q211	F-3 ∗		


K
J
I
H
1
2
3
4
Q408
Q406
Q403
T401
L401
C403
C404
C406
D405
D414
RV305
RV205
L302
L202
C327
C227
IC201
IC301
TP201
TP202
TP203
TP204
TP205
TP206
TP301
TP302
TP303
TP306
RV201
RV202
RV203
RV204
RV301
RV302
L201
L301
FL201
E201
E202
E302
CN315B
CN316Y
TP403
TP402
E401
CN303R
CN302W
A
DIP
A5
AU-161
IS-39V-0
1-641-588-13
SONY
MADE IN JAPAN
LOT NO
S NO
A-6713
-485-B



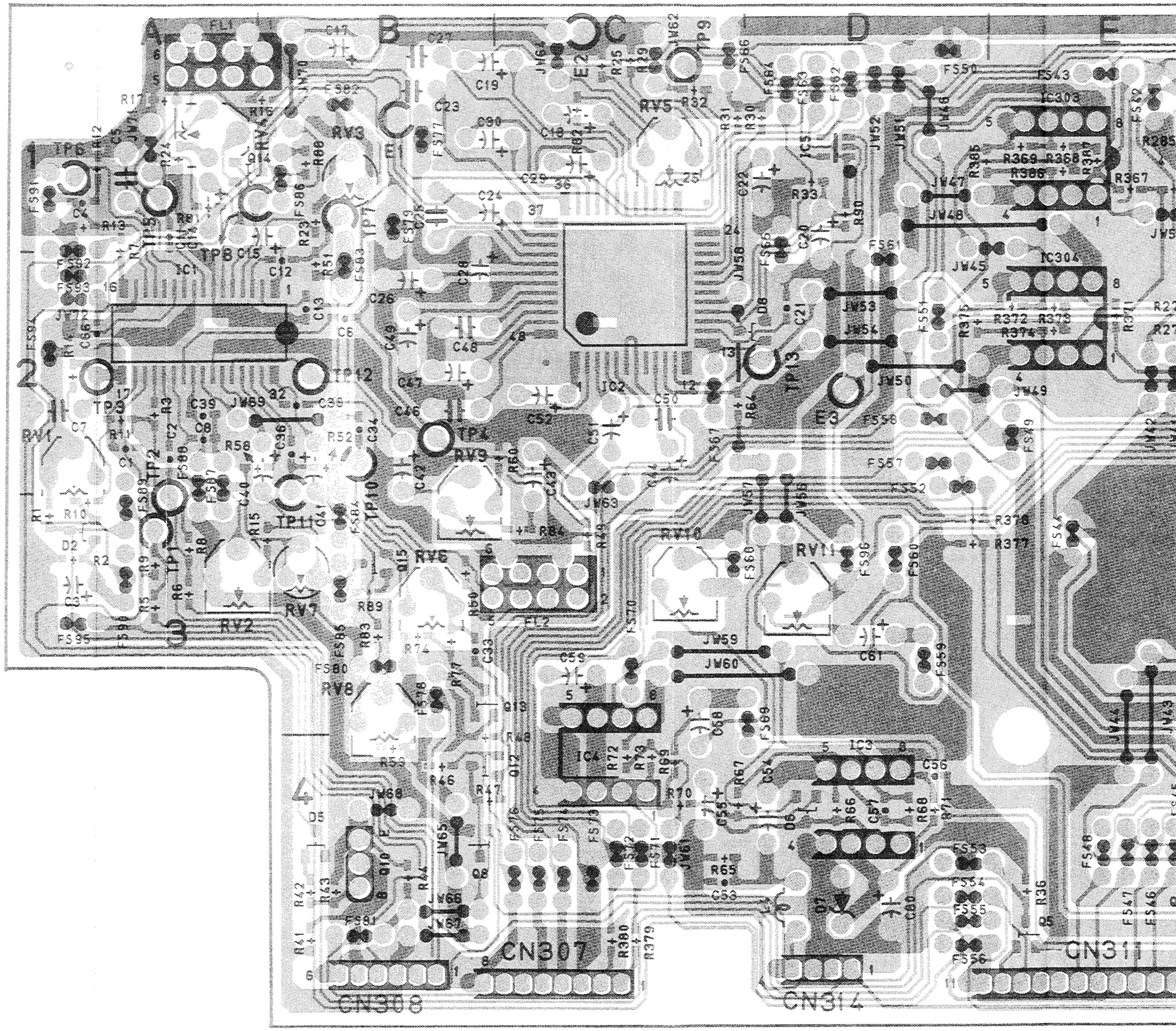
AU-161/A — A SIDE —
1-641-588-13 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

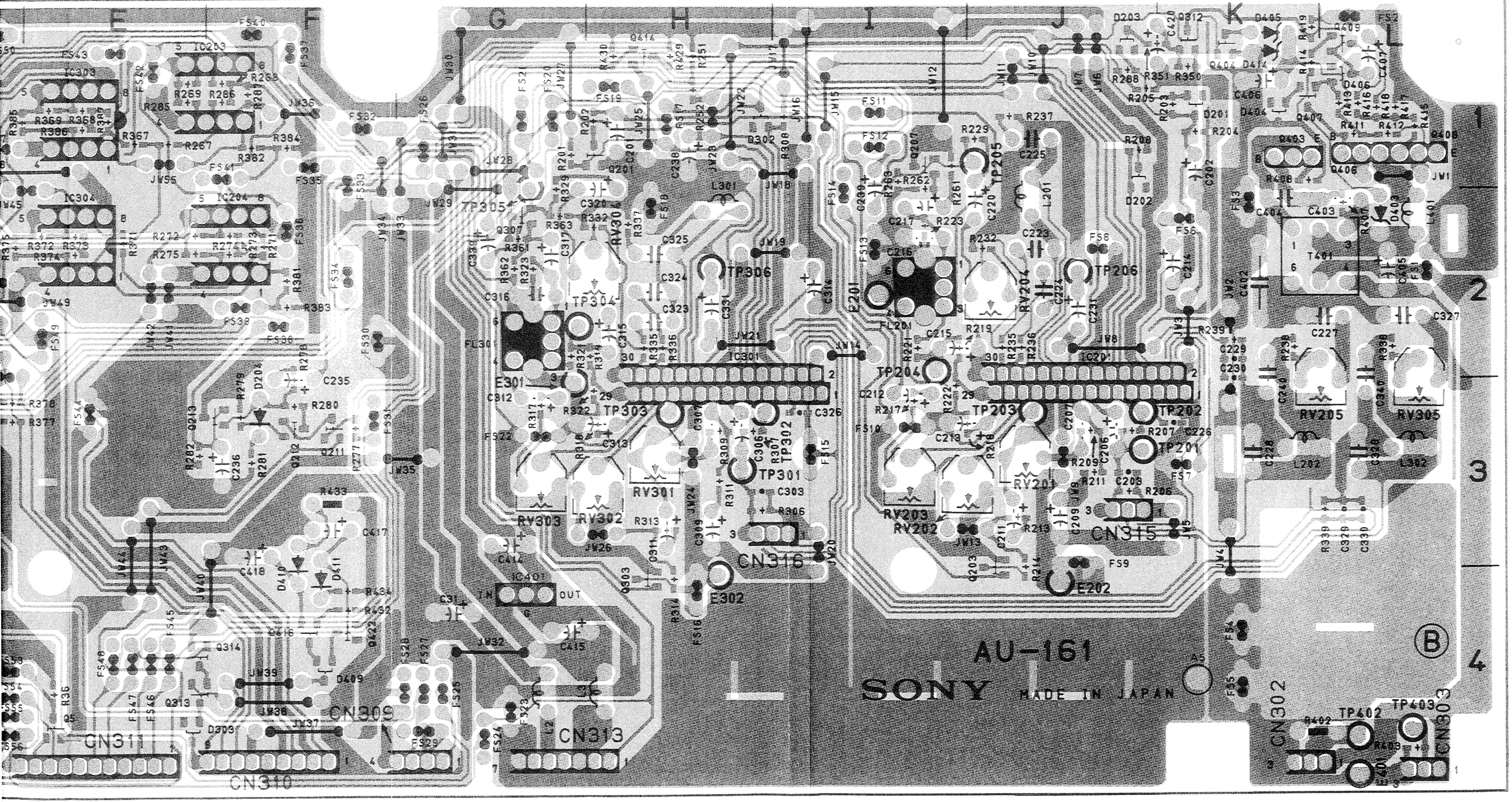
AU-161A : AFM PROCESS/NORMAL AUDIO PROCESS

AU-161A (1-641-588-13)

* mark : B SIDE mount

CN302	K-4	Q212	F-3 *
CN303	L-4	Q213	E-3 *
CN307	C-4	Q303	H-4 *
CN308	B-4	Q307	G-2 *
CN309	F-4	Q312	K-1 *
CN310	F-4	Q313	E-4 *
CN311	E-4	Q314	F-4 *
CN313	H-4	Q403	K-1
CN314	D-4	Q404	K-1 *
CN315	K-3	Q406	L-1
CN316	I-3	Q407	K-1 *
		Q408	L-1
D2	A-3 *	Q409	L-1 *
D5	B-4 *	Q414	H-1 *
D6	D-4 *	Q416	F-4 *
D7	D-4	Q422	F-4 *
D8	D-2 *		
D201	K-1 *	RV1	A-3
D202	I-2 *	RV2	A-3
D203	J-1 *	RV3	B-1
D204	F-3	RV4	B-1
D302	H-1 *	RV5	C-1
D303	F-4 *	RV6	B-3
D403	L-2	RV7	B-3
D404	K-1 *	RV8	B-4
D405	K-1	RV9	B-2
D406	L-1 *	RV10	C-3
D409	F-4 *	RV11	D-3
D410	F-4	RV201	J-3
D411	F-4	RV202	I-3
		RV203	I-3
E1	B-1	RV204	J-2
E2	C-1	RV205	L-2
E3	D-2	RV301	H-3
E201	I-2	RV302	H-3
E202	J-4	RV303	G-3
E301	H-2	RV304	H-2
E302	H-4	RV305	L-2
E401	L-4		
		TP1	A-3
FL1	A-1	TP2	A-3
FL2	C-3	TP3	A-2
FL201	I-2	TP4	B-2
FL301	G-3	TP5	A-1
		TP6	A-1
IC1	A-2 *	TP7	B-1
IC2	C-2 *	TP8	B-1
IC3	D-4	TP9	C-1
IC4	C-4	TP10	B-2
IC5	D-1 *	TP11	B-3
IC201	J-2	TP12	B-2
IC203	F-1	TP13	D-2
IC204	F-2	TP201	K-3
IC301	H-2	TP202	K-3
IC303	E-1	TP203	J-3
IC304	E-2	TP204	I-2
IC401	G-4	TP205	J-1
		TP206	J-2
Q5	E-4 *	TP301	H-3
Q8	B-4 *	TP302	I-3
Q10	B-4	TP303	H-3
Q12	C-3 *	TP304	H-2
Q13	C-3 *	TP305	G-2
Q14	A-1 *	TP306	H-2
Q15	B-3 *	TP402	L-4
Q201	H-1 *	TP403	L-4
Q203	J-4 *		
Q207	I-1 *	T401	L-3
Q211	F-3 *		

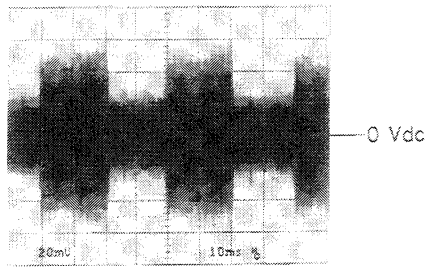

A
B
C
D
E
1
2
3
4
FL1
FL2
IC1
IC2
IC3
IC4
IC303
IC304
RV1
RV2
RV3
RV4
RV5
RV6
RV7
RV8
RV9
RV10
RV11
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
TP11
TP12
TP13
E1
E2
E3
CN307
CN308
CN311
CN314


E
F
G
H
I
J
K
L
1
2
3
4
IC303
IC203
IC304
IC204
IC301
IC201
IC401
IN
OUT
FL301
FL201
T401
RV301
RV302
RV303
RV201
RV202
RV203
RV204
RV205
RV305
TP201
TP202
TP203
TP204
TP205
TP206
TP301
TP302
TP303
TP304
TP305
TP306
TP402
TP403
E201
E202
E301
E302
CN302
CN303
CN309
CN310
CN311
CN313
CN315
CN316
AU-161
SONY
MADE IN JAPAN
B

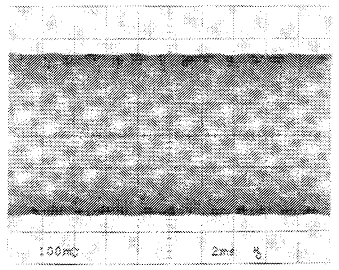
AU-161/A — B SIDE —
1-641-588-13 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

AU-161A (1/2) ; AFM PROCESS

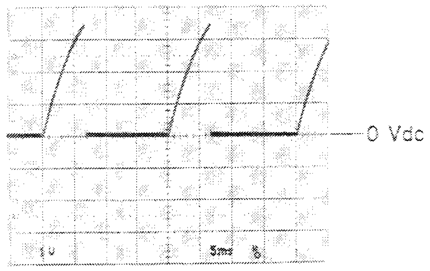
① TP1 (A-3) PB mode



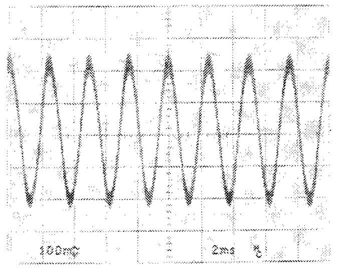
⑥ TP7 (B-1) STOP (E-E) mode



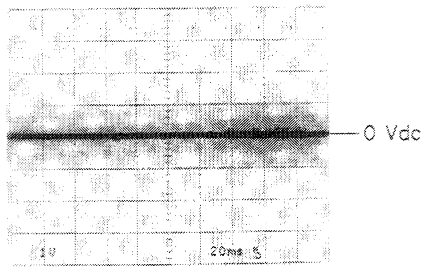
② TP3 (A-2) PB mode



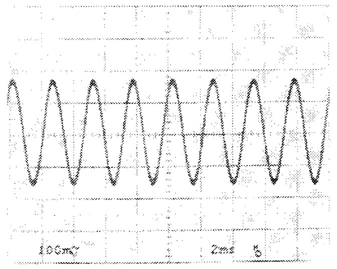
⑦ TP8 (B-1) PB mode



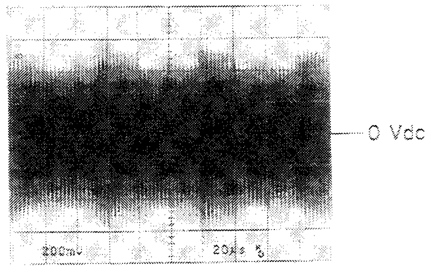
③ TP6 (A-1) PB mode



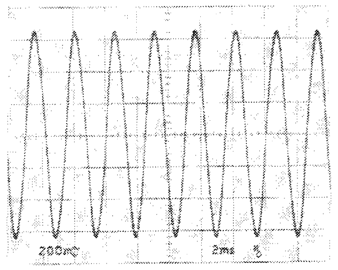
TP8 (B-1) REC mode



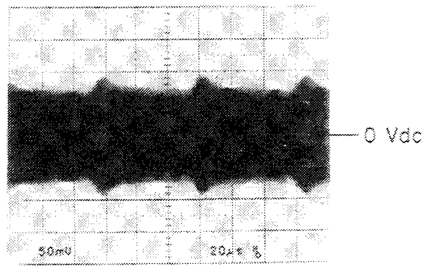
④ TP4 (B-2) PB mode



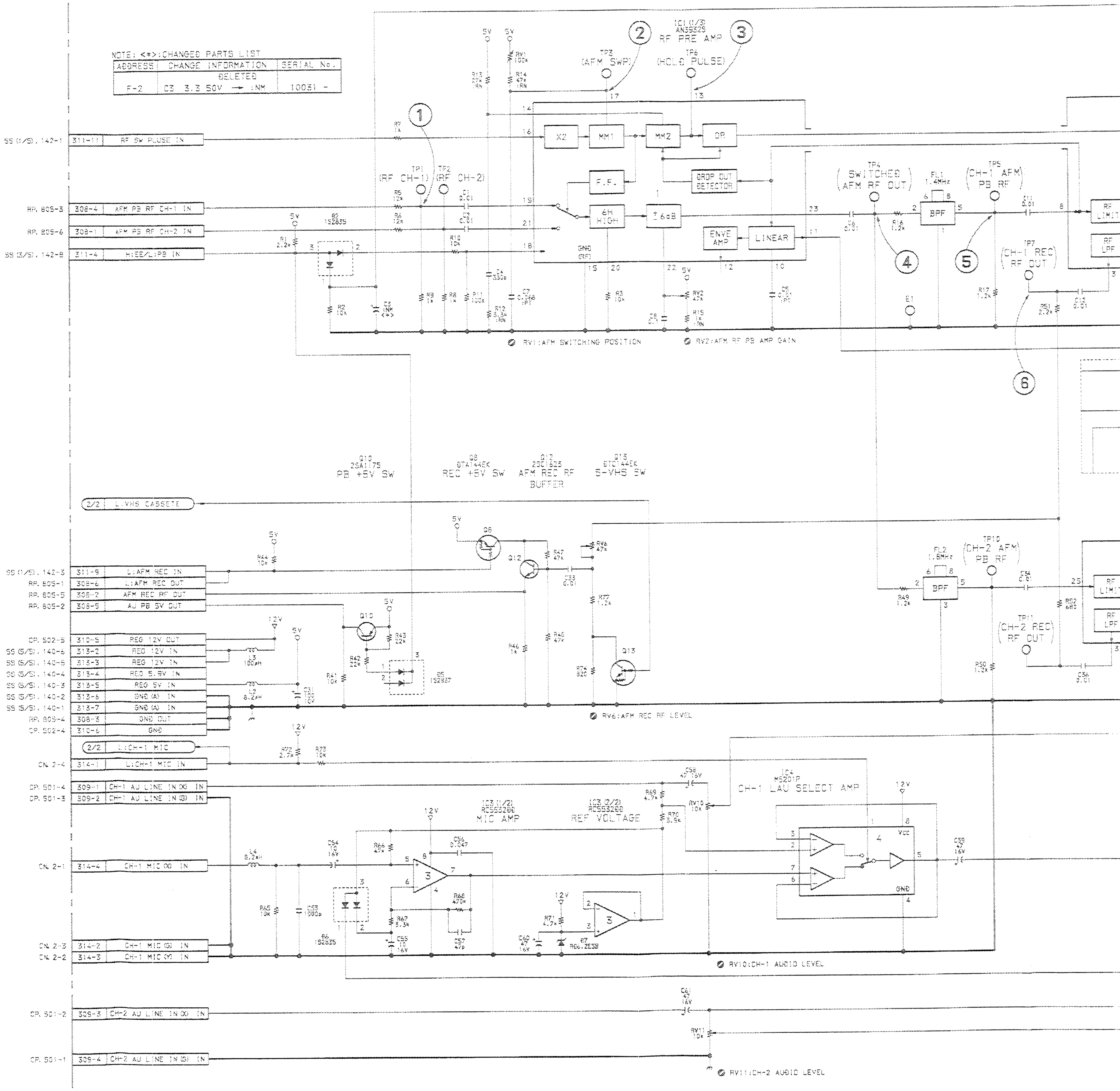
⑧ TP9 (C-1) STOP (E-E) mode

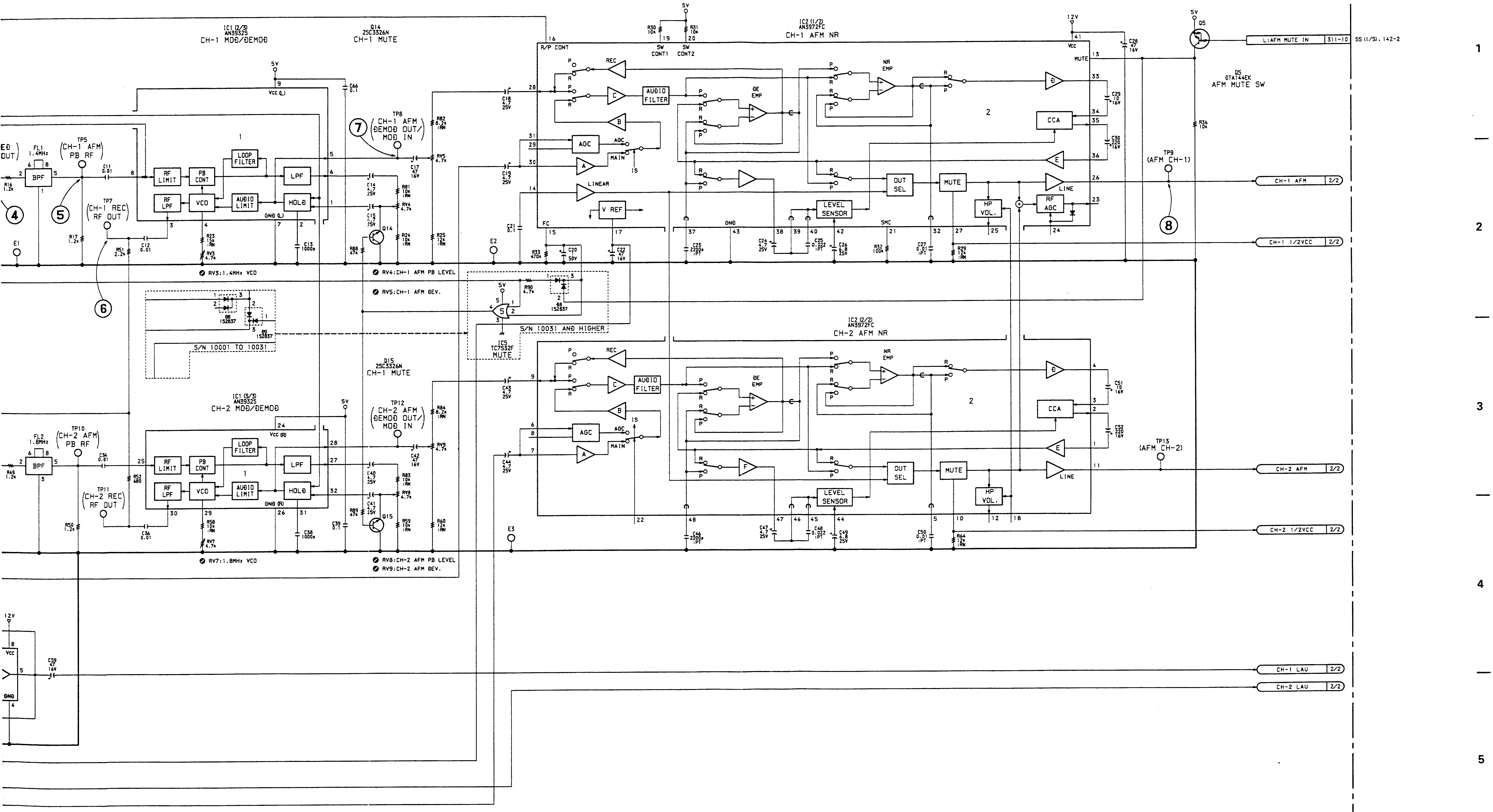


⑤ TP5 (A-1) PB mode



Measurement Condition
CH-1, AUDIO IN: 400 Hz, −10 dBu
STOP (E-E) mode: N-VHS
PB mode: KRV-45PS


NOTE: <*>: CHANGED PARTS LIST
ADDRESS
CHANGE INFORMATION
SERIAL No.
F-2
C3 3.3 50V → :NM
DELETED
10031 ~
IC1 (1/3) AN3552S RF PRE AMP
TP3 (AFM SWP)
TP6 (HOLD PULSE)
TP1 (RF CH-1)
TP2 (RF CH-2)
RF SW PULSE IN
AFM PB RF CH-1 IN
AFM PB RF CH-2 IN
H:EE/L:PB IN
X2
MM1
MM2
OR
F.F.
DROP OUT DETECTOR
6H HIGH
16dB
ENVE AMP
LINEAR
GND (RF)
TP4 (SWITCHED AFM RF OUT)
TP5 (CH-1 AFM PB RF)
TP7 (CH-1 REC RF OUT)
FL1 1.4MHz
BPF
RV1: AFM SWITCHING POSITION
RV2: AFM RF PB AMP GAIN
Q10 2SA1175 PB +5V SW
Q8 DTA144EK REC +5V SW
Q12 2SC1623 AFM REC RF BUFFER
Q13 DTC144EK S-VHS SW
2/2 L:VHS CASSETE
L:AFM REC IN
L:AFM REC OUT
AFM REC RF OUT
AU PB 5V OUT
REG 12V OUT
REG 12V IN
REG 5.5V IN
REG 5V IN
GND (A) IN
GND OUT
GND
TP10 (CH-2 AFM PB RF)
FL2 1.6MHz
TP11 (CH-2 REC RF OUT)
RV6: AFM REC RF LEVEL
2/2 L:CH-1 MIC
L:CH-1 MIC IN
CH-1 AU LINE IN (H) IN
CH-1 AU LINE IN (S) IN
IC4 M5201P CH-1 L&U SELECT AMP
IC3 (1/2) RC5532DD MIC AMP
IC3 (2/2) RC5532DD REF VOLTAGE
CH-1 MIC (H) IN
CH-1 MIC (S) IN
CH-1 MIC (M) IN
RV10: CH-1 AUDIO LEVEL
CH-2 AU LINE IN (H) IN
CH-2 AU LINE IN (S) IN
RV11: CH-2 AUDIO LEVEL
RF LIMIT
RF LPF


IC1 (2/3) AN3932S CH-1 MOD/DEMOD
Q14 2SC3326N CH-1 MUTE
IC2 (1/2) AN3972FC CH-1 AFM NR
IC1 (3/3) AN3932S CH-2 MOD/DEMOD
Q15 2SC3326N CH-1 MUTE
IC2 (2/2) AN3972FC CH-2 AFM NR
Q5 DTA144EK AFM MUTE SW
IC5 TC7S32F MUTE
S/N 10031 AND HIGHER
S/N 10001 TO 10031
FL1 1.4MHz
FL2 1.8MHz
BPF
RF LIMIT
PB CONT
LOOP FILTER
LPF
RF LPF
VCO
AUDIO LIMIT
HOLD
AUDIO FILTER
AGC
MAIN
LINEAR
V REF
DE EMP
NR EMP
CCA
OUT SEL
MUTE
LEVEL SENSOR
HP VOL.
RF AGC
LINE
REC
TP5 (CH-1 AFM PB RF)
TP7 (CH-1 REC RF OUT)
TP8 (CH-1 AFM DEMOD OUT/MOD IN)
TP9 (AFM CH-1)
TP10 (CH-2 AFM PB RF)
TP11 (CH-2 REC RF OUT)
TP12 (CH-2 AFM DEMOD OUT/MOD IN)
TP13 (AFM CH-2)
④
⑤
⑥
⑦
⑧
RV3:1.4MHz VCO
RV4:CH-1 AFM PB LEVEL
RV5:CH-1 AFM DEV.
RV7:1.8MHz VCO
RV8:CH-2 AFM PB LEVEL
RV9:CH-2 AFM DEV.
L:AFM MUTE IN 311-10 SS (1/5), 142-2
CH-1 AFM 2/2
CH-1 1/2VCC 2/2
CH-2 AFM 2/2
CH-2 1/2VCC 2/2
CH-1 LAU 2/2
CH-2 LAU 2/2
SW CONT1
SW CONT2
R/P CONT
5V
12V
E1
E2
E3
1
2
3
4
5

AU-161A (1/2)

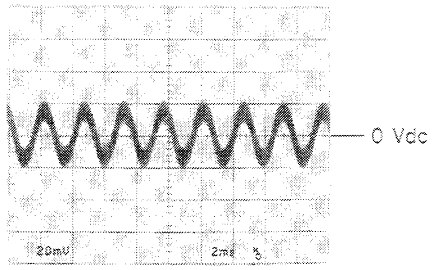
1-641-588-12, 13 (1)
SVO-9500MDP

AU-161A (2/2)

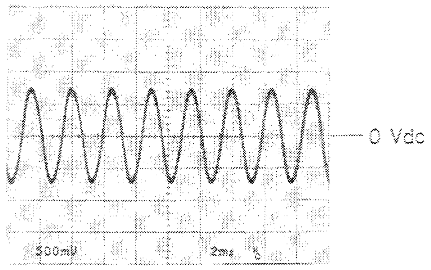
13-36

AU-161A (2/2)

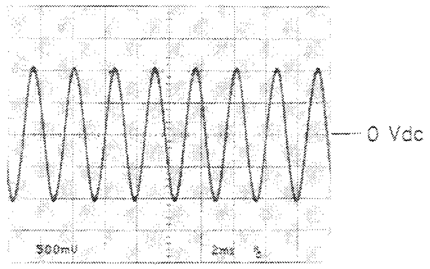
① TP203 (J-3) PB mode



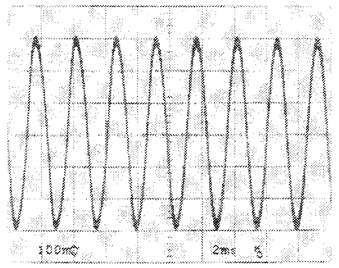
② TP204 (I-2) PB mode



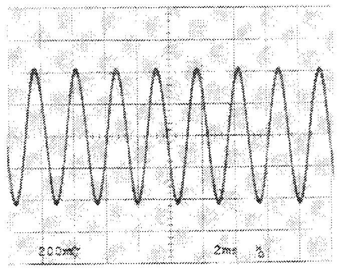
TP204 (I-2) STOP (E-E) mode



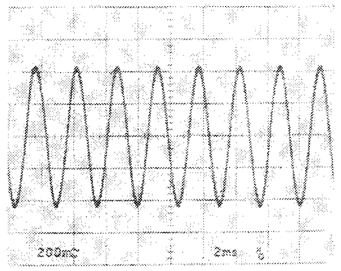
③ TP205 (J-1) PB mode



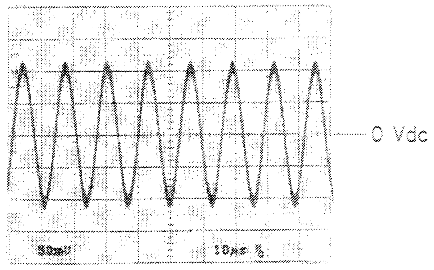
TP205 (J-1) STOP (E-E) mode



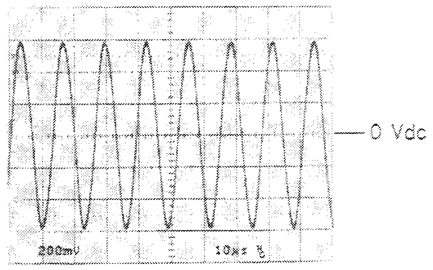
④ TP206 (J-2) STOP (E-E) mode



⑤ TP402 (L-4) REC mode



⑥ TP403 (L-4) REC mode

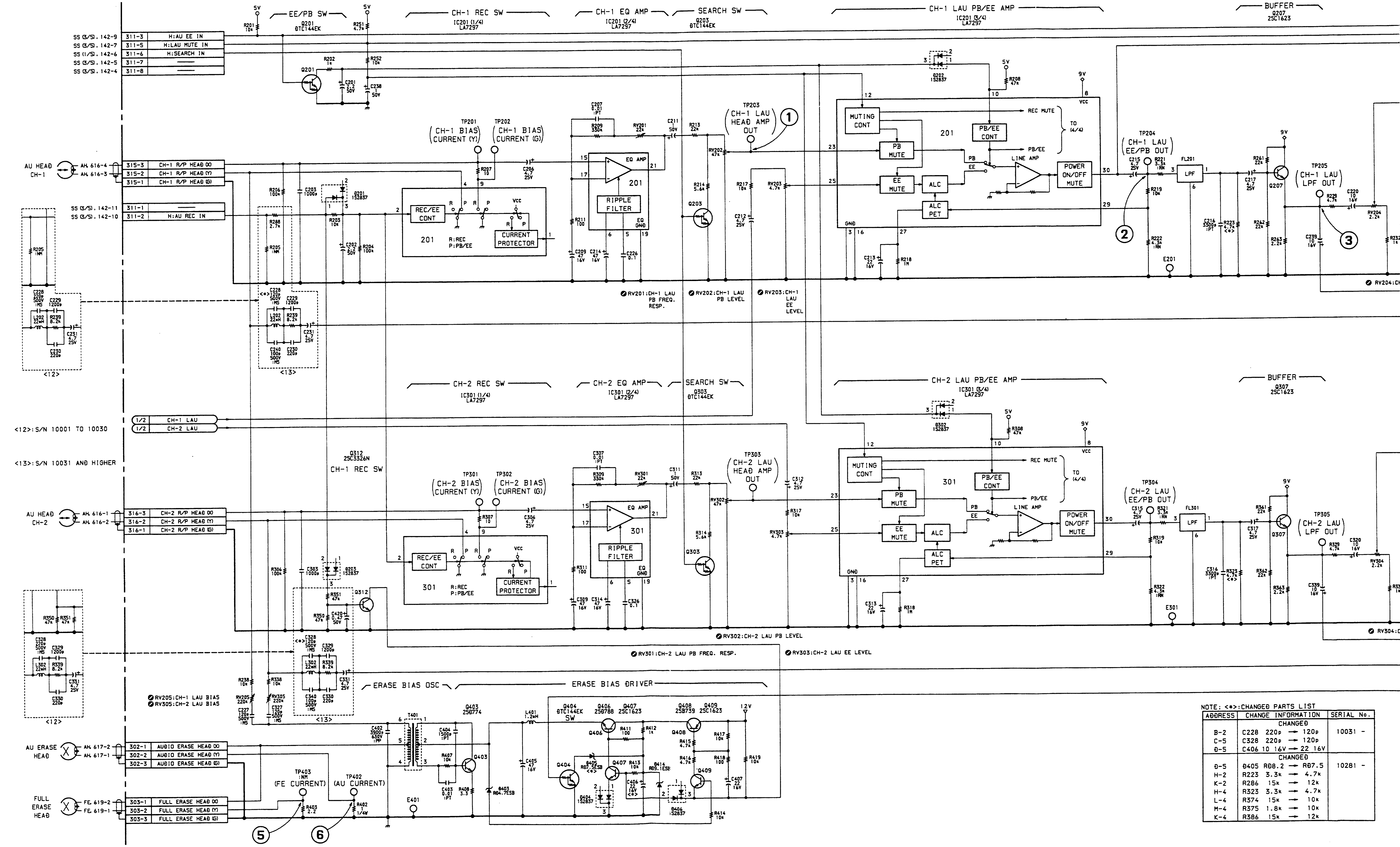


Measurement Condition

CH-1, AUDIO IN: 400 Hz, −10 dBu
STOP (E-E) mode: N-VHS
REC mode: N-VHS
PB mode: KRV-45PS

13-36

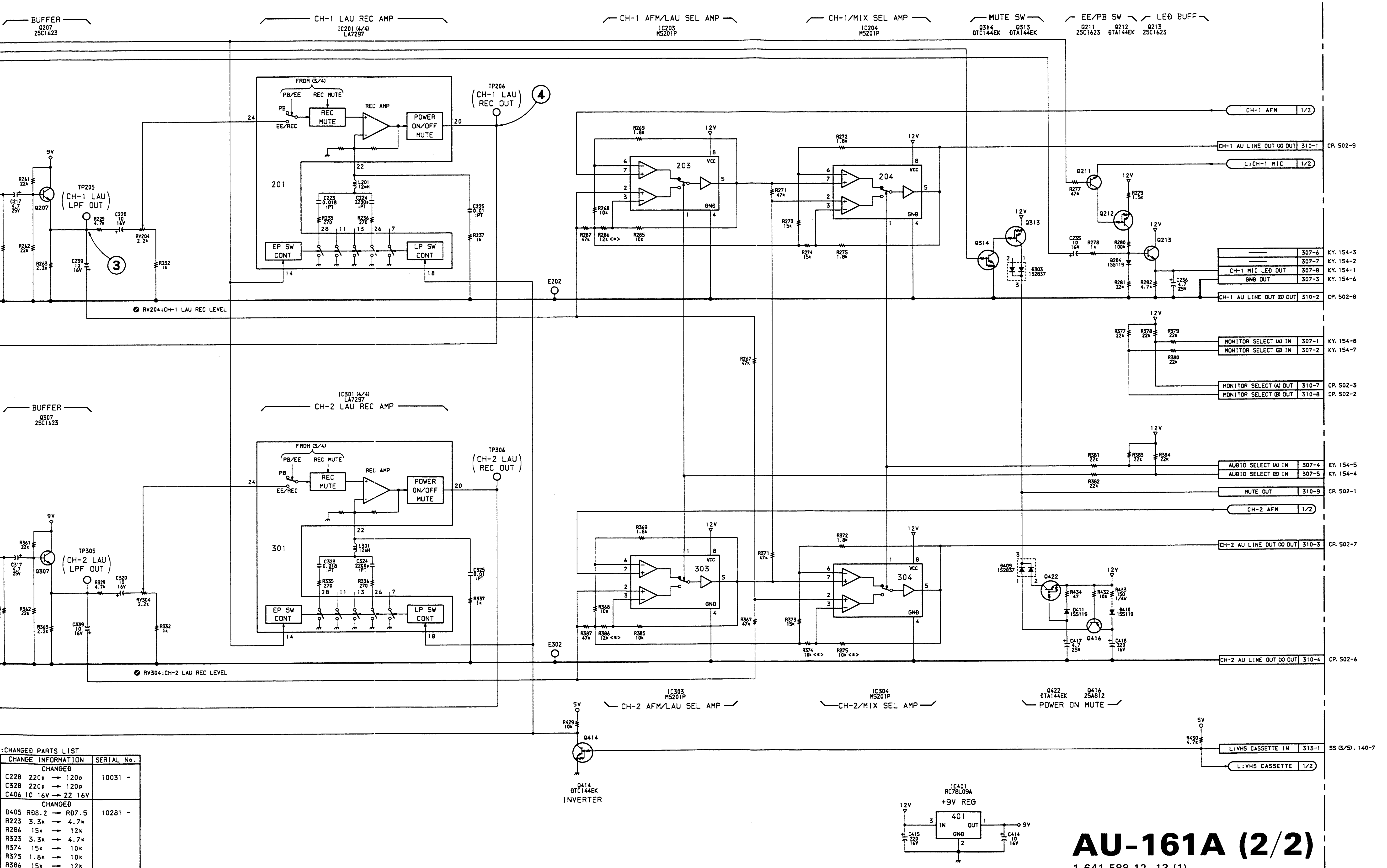
AU-161A (2/2); NORMAL AUDIO PROCESS


EE/PB SW
Q201 DTC144EK
CH-1 REC SW
IC201 (1/4) LA7297
CH-1 EQ AMP
IC201 (2/4) LA7297
SEARCH SW
Q203 DTC144EK
CH-1 LAU PB/EE AMP
IC201 (3/4) LA7297
BUFFER
Q207 2SC1623
SS (3/5). 142-9
SS (3/5). 142-7
SS (1/5). 142-6
SS (3/5). 142-5
SS (3/5). 142-4
311-3 H:AU EE IN
311-5 H:LAU MUTE IN
311-6 H:SEARCH IN
311-7
311-8
AU HEAD CH-1
AH. 616-4
AH. 616-3
315-3 CH-1 R/P HEAD (X)
315-2 CH-1 R/P HEAD (Y)
315-1 CH-1 R/P HEAD (G)
SS (3/5). 142-11
SS (3/5). 142-10
311-1
311-2 H:AU REC IN
TP201 (CH-1 BIAS CURRENT (Y))
TP202 (CH-1 BIAS CURRENT (G))
REC/EE CONT
CURRENT PROTECTOR
R:REC P:PB/EE
RIPPLE FILTER
EQ AMP
TP203 (CH-1 LAU HEAD AMP OUT)
①
MUTING CONT
PB MUTE
EE MUTE
ALC
ALC DET
PB/EE CONT
LINE AMP
POWER ON/OFF MUTE
REC MUTE
PB/EE
TO (4/4)
TP204 (CH-1 LAU EE/PB OUT)
②
FL201 LPF
TP205 (CH-1 LAU LPF OUT)
③
E201
RV201:CH-1 LAU PB FREQ. RESP.
RV202:CH-1 LAU PB LEVEL
RV203:CH-1 LAU EE LEVEL
RV204:CH
<12>
<13>
CH-2 REC SW
IC301 (1/4) LA7297
CH-2 EQ AMP
IC301 (2/4) LA7297
SEARCH SW
Q303 DTC144EK
CH-2 LAU PB/EE AMP
IC301 (3/4) LA7297
BUFFER
Q307 2SC1623
1/2 CH-1 LAU
1/2 CH-2 LAU
<12>:S/N 10001 TO 10030
<13>:S/N 10031 AND HIGHER
Q312 2SC3326N
CH-1 REC SW
TP301 (CH-2 BIAS CURRENT (Y))
TP302 (CH-2 BIAS CURRENT (G))
TP303 (CH-2 LAU HEAD AMP OUT)
TP304 (CH-2 LAU EE/PB OUT)
TP305 (CH-2 LAU LPF OUT)
AU HEAD CH-2
AH. 616-1
AH. 616-2
316-3 CH-2 R/P HEAD (X)
316-2 CH-2 R/P HEAD (Y)
316-1 CH-2 R/P HEAD (G)
FL301 LPF
E301
RV302:CH-2 LAU PB LEVEL
RV301:CH-2 LAU PB FREQ. RESP.
RV303:CH-2 LAU EE LEVEL
RV304:
RV205:CH-1 LAU BIAS
RV305:CH-2 LAU BIAS
ERASE BIAS OSC
ERASE BIAS DRIVER
Q403 2SD774
Q404 DTC144EK SW
Q406 2SD788
Q407 2SC1623
Q408 2SB739
Q409 2SC1623
T401
L401 1.2mH
12V
AU ERASE HEAD
AH. 617-2
AH. 617-1
302-1 AUDIO ERASE HEAD (X)
302-2 AUDIO ERASE HEAD (Y)
302-3 AUDIO ERASE HEAD (G)
FULL ERASE HEAD
FE. 619-2
FE. 619-1
303-1 FULL ERASE HEAD (X)
303-2 FULL ERASE HEAD (Y)
303-3 FULL ERASE HEAD (G)
TP403 :NM (FE CURRENT)
TP402 (AU CURRENT)
E401
⑤
⑥

NOTE: <*>:CHANGED PARTS LIST

ADDRESS	CHANGE INFORMATION	SERIAL No.
	CHANGED	
B-2	C228 220p → 120p	10031 -
C-5	C328 220p → 120p	
D-5	C406 10 16V → 22 16V	
	CHANGED	
D-5	D405 RD8.2 → RD7.5	10281 -
H-2	R223 3.3k → 4.7k	
K-2	R286 15k → 12k	
H-4	R323 3.3k → 4.7k	
L-4	R374 15k → 10k	
M-4	R375 1.8k → 10k	
K-4	R386 15k → 12k	

13-37


BUFFER
Q207 2SC1623
CH-1 LAU REC AMP
IC201 (4/4) LA7297
CH-1 AFM/LAU SEL AMP
IC203 M5201P
CH-1/MIX SEL AMP
IC204 M5201P
MUTE SW
Q314 DTC144EK
Q313 DTA144EK
EE/PB SW
Q211 2SC1623
Q212 DTA144EK
LED BUFF
Q213 2SC1623
FROM (3/4)
PB/EE
REC MUTE
REC AMP
POWER ON/OFF MUTE
EP SW CONT
LP SW CONT
TP206 (CH-1 LAU REC OUT)
TP205 (CH-1 LAU LPF OUT)
RV204 2.2k
RV204:CH-1 LAU REC LEVEL
E202
201
203
204
CH-1 AFM 1/2
CH-1 AU LINE OUT (X) OUT 310-1 CP. 502-9
L:CH-1 MIC 1/2
307-6 KY. 154-3
307-7 KY. 154-2
CH-1 MIC LED OUT 307-8 KY. 154-1
GND OUT 307-3 KY. 154-6
CH-1 AU LINE OUT (G) OUT 310-2 CP. 502-8
MONITOR SELECT (A) IN 307-1 KY. 154-8
MONITOR SELECT (B) IN 307-2 KY. 154-7
MONITOR SELECT (A) OUT 310-7 CP. 502-3
MONITOR SELECT (B) OUT 310-8 CP. 502-2
AUDIO SELECT (A) IN 307-4 KY. 154-5
AUDIO SELECT (B) IN 307-5 KY. 154-4
MUTE OUT 310-9 CP. 502-1
CH-2 AFM 1/2
CH-2 AU LINE OUT (X) OUT 310-3 CP. 502-7
CH-2 AU LINE OUT (X) OUT 310-4 CP. 502-6
L:VHS CASSETTE IN 313-1 SS (3/5). 140-7
L:VHS CASSETTE 1/2
BUFFER
Q307 2SC1623
IC301 (4/4) LA7297
CH-2 LAU REC AMP
TP306 (CH-2 LAU REC OUT)
TP305 (CH-2 LAU LPF OUT)
RV304:CH-2 LAU REC LEVEL
E302
301
303
304
IC303 M5201P
CH-2 AFM/LAU SEL AMP
IC304 M5201P
CH-2/MIX SEL AMP
Q422 DTA144EK
Q416 2SA812
POWER ON MUTE
Q414 DTC144EK
INVERTER
IC401 RC78L09A
+9V REG
401
IN OUT GND
12V
9V
5V
1
2
3
4
5
H I J K L M N O P

:CHANGED PARTS LIST

CHANGE INFORMATION	SERIAL No.
CHANGED C228 220p → 120p C328 220p → 120p C406 10 16V → 22 16V	10031 -
CHANGED D405 RD8.2 → RD7.5 R223 3.3k → 4.7k R286 15k → 12k R323 3.3k → 4.7k R374 15k → 10k R375 1.8k → 10k R386 15k → 12k	10281 -

AU-161A (2/2)

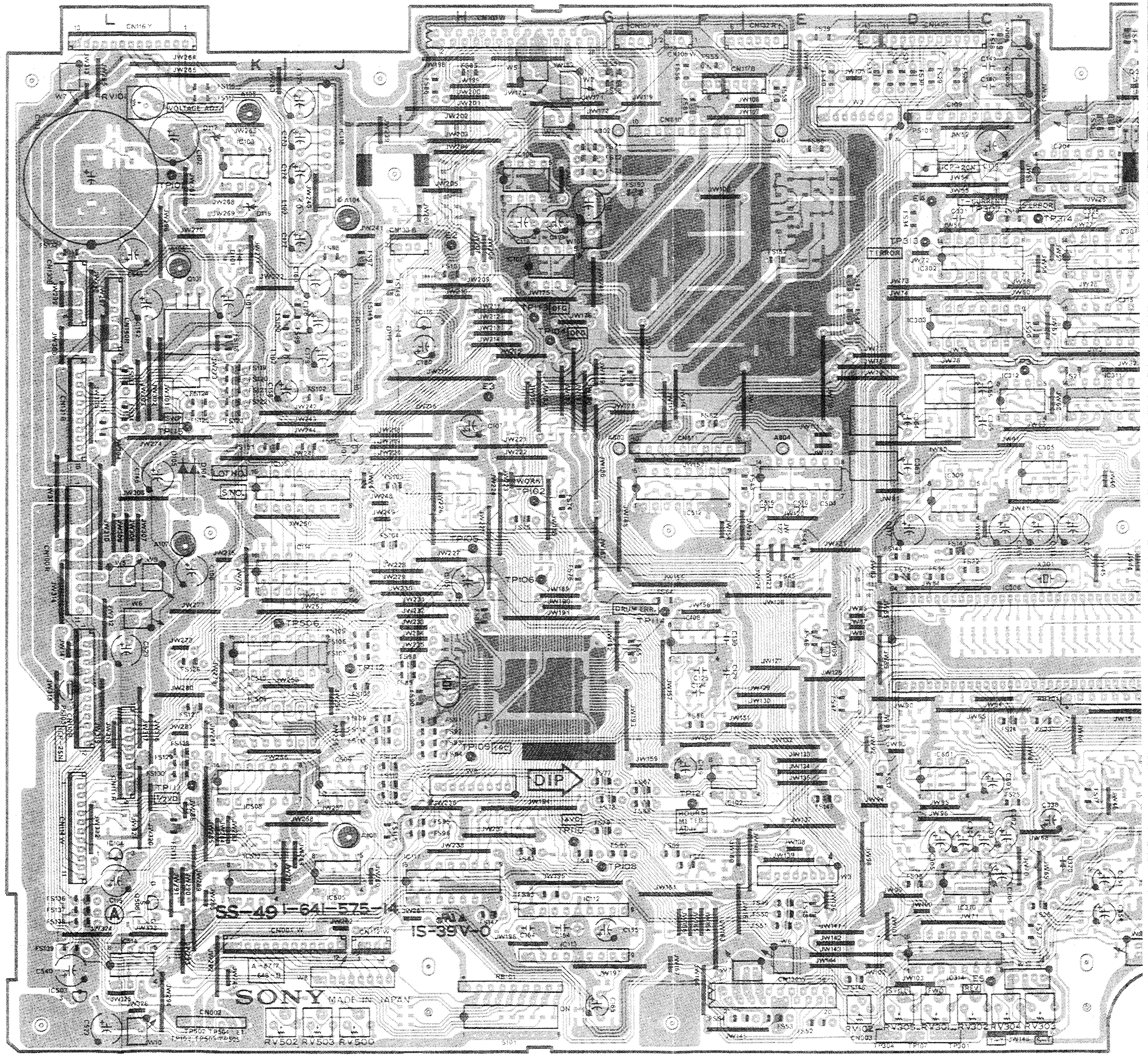
1-641-588-12, 13 (1)
SVO-9500MDP

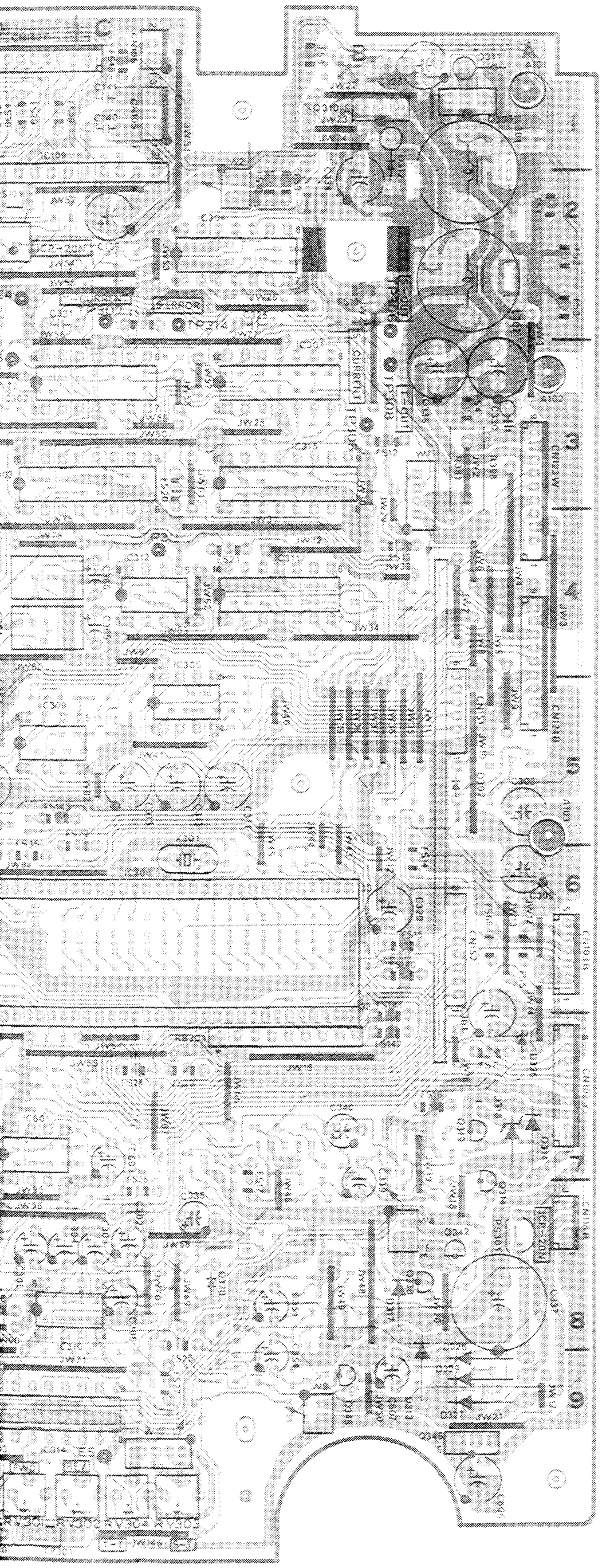
SS-49A ; SERVO & SYSTEM CONTROL

SS-49A (1-641-575-14)

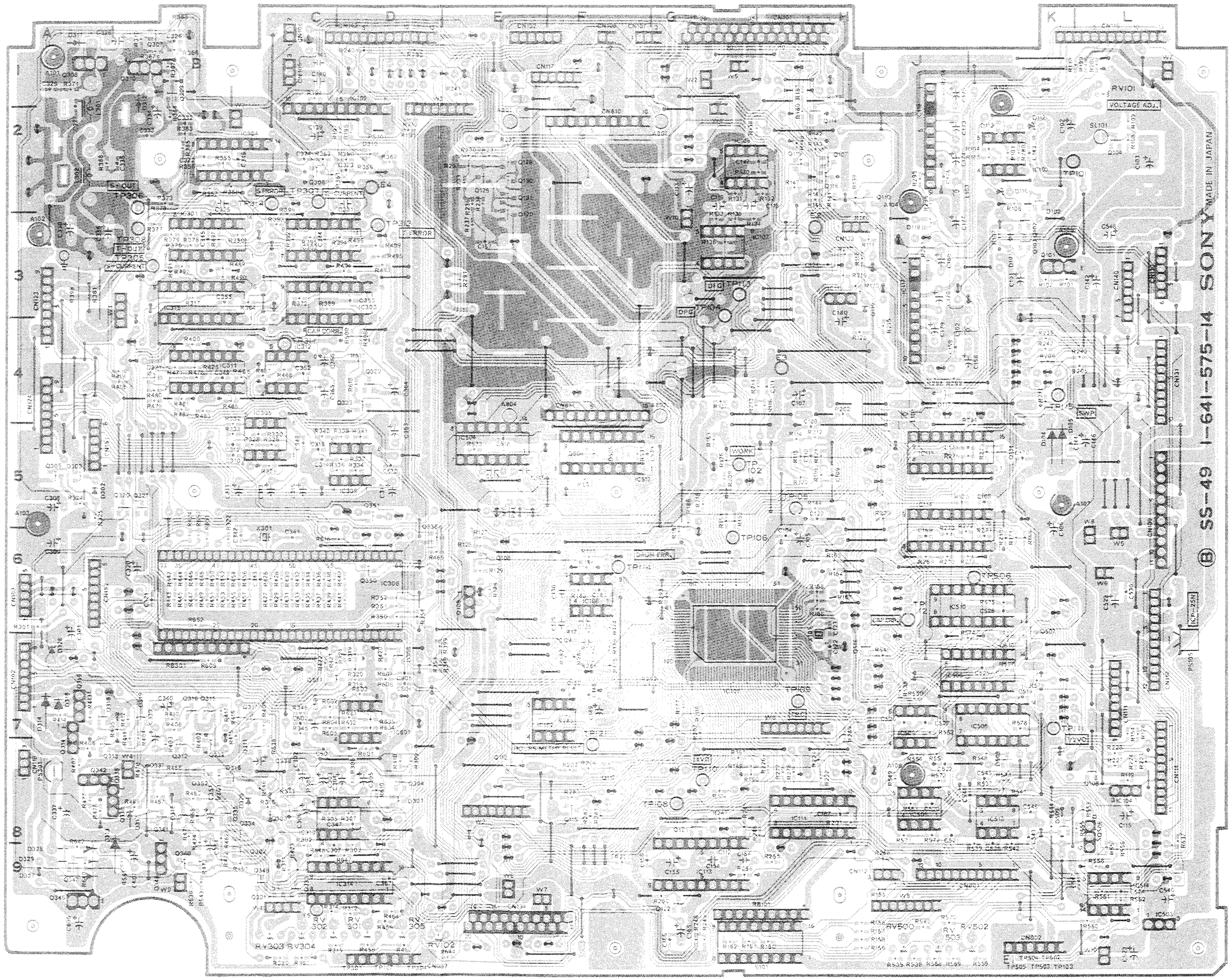
CN100	L-5	IC103	K-2	Q311	C-8 *	TP305	B-3
CN101	H-1	IC104	L-8	Q312	B-8 *	TP306	B-2
CN102	A-7	IC106	G-2	Q313	A-8 *	TP307	C-2
CN103	A-6	IC107	G-3	Q314	A-8	TP308	B-3
CN105	C-1	IC108	F-6	Q315	B-7 *	TP311	C-4
CN106	C-1	IC109	D-1	Q316	B-7 *	TP313	D-3
CN107	F-1	IC111	H-8	Q317	C-7 *	TP314	C-2
CN108	F-1	IC112	G-8	Q318	A-7 *	TP502	K-9
CN110	L-7	IC114	J-5	Q319	A-7	TP503	K-9
CN111	L-7	IC115	K-5	Q320	A-5 *	TP504	K-9
CN114	L-8	IC116	H-3	Q321	B-5 *	TP505	K-9
CN116	L-1	IC301	B-3	Q322	D-4 *	TP506	J-6
CN117	F-1	IC302	D-3	Q323	D-4 *		
CN118	A-8	IC303	D-3	Q331	C-7 *	X101	H-6
CN123	A-3	IC304	C-2	Q332	B-8 *	X301	C-5
CN124	A-5	IC305	C-4	Q333	C-9 *		
CN130	L-3	IC306	C-6	Q334	C-8 *		
CN131	L-4	IC310	D-8	Q335	C-8 *		
CN132	E-1	IC311	B-4	Q336	D-6 *		
CN133	J-3	IC312	C-4	Q337	B-8 *		
CN134	E-9	IC314	D-9	Q338	A-8		
CN140	L-3	IC315	B-3	Q340	B-9 *		
CN142	D-1	IC503	L-9	Q341	B-8 *		
CN151	A-5	IC504	E-5	Q342	A-8		
CN152	A-6	IC505	J-8	Q346	A-9		
CN810	F-2	IC506	K-7	Q347	A-9 *		
CN811	F-4	IC508	K-8	Q348	B-9		
		IC509	J-7	Q349	C-9 *		
D101	K-3	IC510	K-6	Q350	D-6 *		
D102	K-2 *	IC512	F-5	Q351	D-5 *		
D104	K-5	IC513	K-8	Q506	L-8		
D105	K-4	IC514	L-9	Q507	K-6 *		
D108	L-8 *	IC601	D-7	Q510	K-7 *		
D112	K-2			Q516	H-7 *		
D113	K-2 *	PS101	D-2				
D116	K-2	PS105	L-7 *	RB101	H-9		
D119	J-3	PS301	A-1	RB301	C-7		
D301	D-8 *						
D302	A-5	Q101	K-3	RV101	L-1		
D303	A-5 *	Q102	K-3 *	RV102	E-9		
D308	D-7 *	Q103	K-3 *	RV301	D-9		
D310	D-2 *	Q104	L-2 *	RV302	D-9		
D311	A-1	Q107	H-2 *	RV303	C-9		
D312	B-1	Q108	E-6 *	RV304	C-9		
D313	A-9	Q109	E-6	RV305	D-9		
D314	A-7	Q110	J-2 *	RV500	J-9		
D315	B-8 *	Q114	H-2 *	RV502	K-9		
D316	B-8 *	Q115	F-8 *	RV503	J-9		
D317	D-8	Q116	H-2 *				
D318	A-7	Q117	F-8 *	S101	H-9		
D319	B-7 *	Q118	E-8 *				
D320	C-8	Q119	H-2 *	TP101	K-2		
D321	B-4 *	Q120	E-2 *	TP102	G-5		
D326	A-7	Q121	G-8 *	TP103	K-9		
D327	A-9	Q128	E-2 *	TP104	G-3		
D328	A-9	Q129	E-2 *	TP105	H-5		
D329	A-9	Q130	E-2 *	TP106	G-6		
D505	F-5 *	Q131	E-2 *	TP107	D-9		
D506	F-5 *	Q134	K-5 *	TP108	G-8		
D508	K-8 *	Q301	C-9 *	TP109	H-7		
D509	K-8 *	Q302	C-9 *	TP110	G-8		
		Q303	C-8 *	TP111	L-7		
E1	K-9	Q304	D-8 *	TP112	J-6		
E2	H-3	Q305	A-5 *	TP113	G-3		
E3	H-4	Q306	C-2 *	TP114	F-6		
E5	C-9	Q307	B-1 *	TP115	K-4		
		Q308	A-1	TP121	F-7		
IC101	G-7 *	Q309	B-1 *	TP301	D-9		
IC102	F-8	Q310	B-1	TP304	D-9		

* mark : B SIDE mount





SS-49/A — A SIDE —
1-641-575-14 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


SONY
SS-49 1-641-575-14
MADE IN JAPAN
VOLTAGE ADJ.

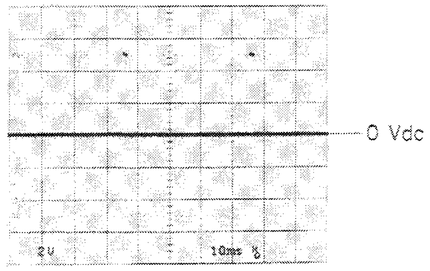
SS-49/A — B SIDE —
1-641-575-14 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

SS-49A (1/5); DRUM/CAPSTAN SERVO CONTROL
VIDEO/AUDIO CONTROL SIGNAL GENERATOR

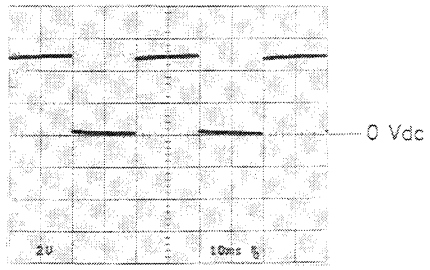
LD-35; LOADING MOTOR

CM-14; CASSETTE COMPARTMENT MOTOR

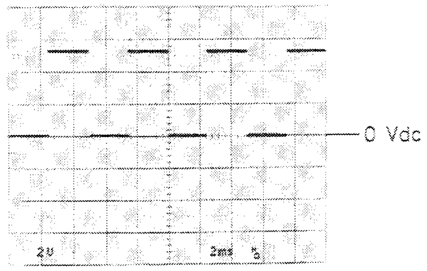
① TP104 (G-3) PB mode



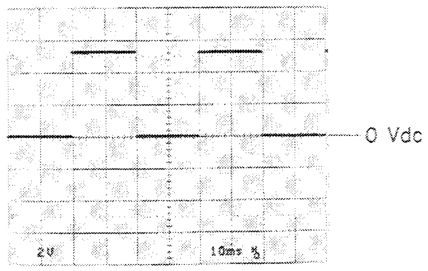
⑤ TP115 (K-4) PB mode



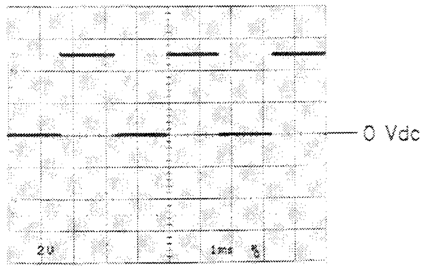
② TP110 (G-8) PB mode



③ TP111 (L-7) PB mode

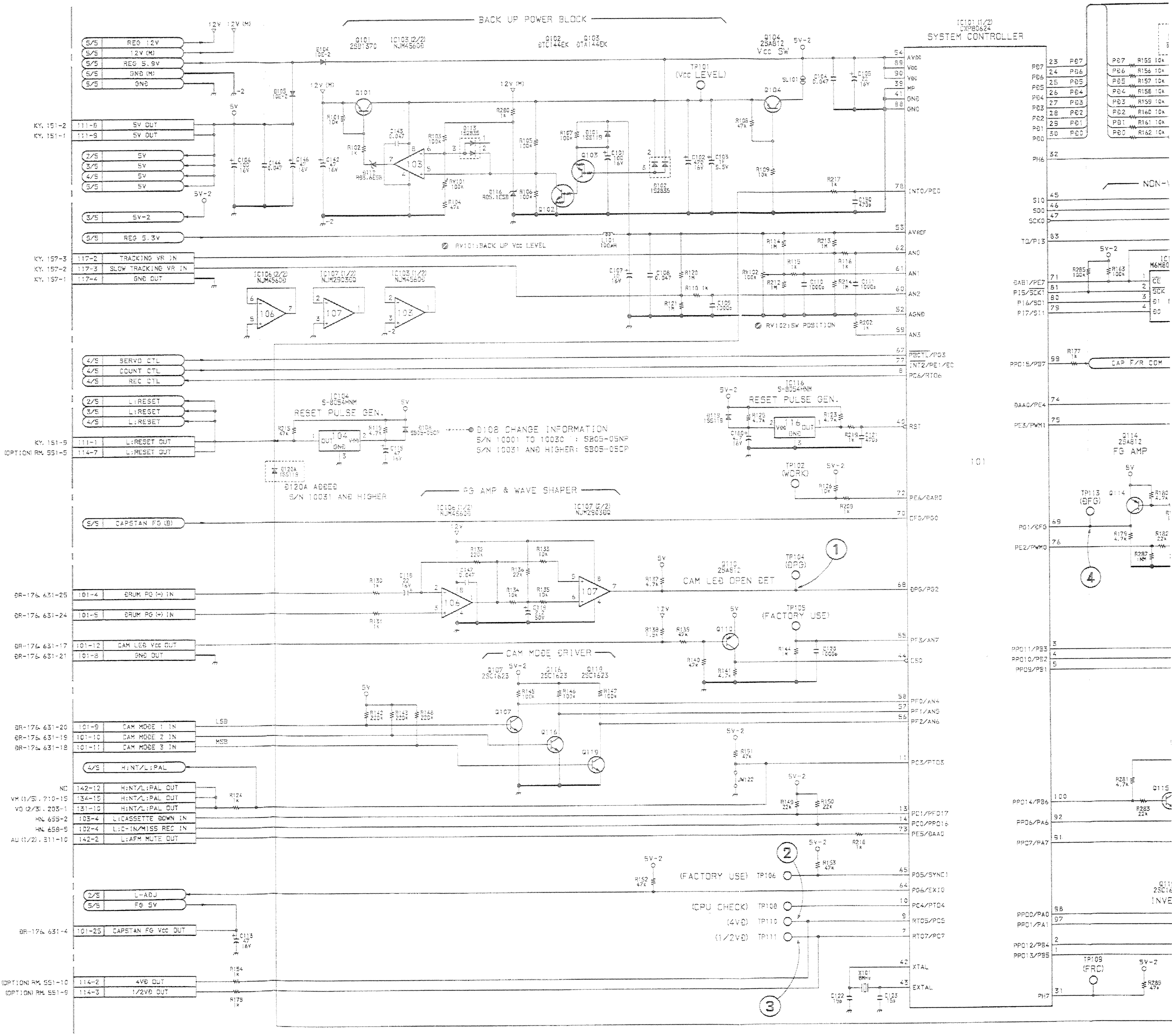


④ TP113 (G-3) PB mode

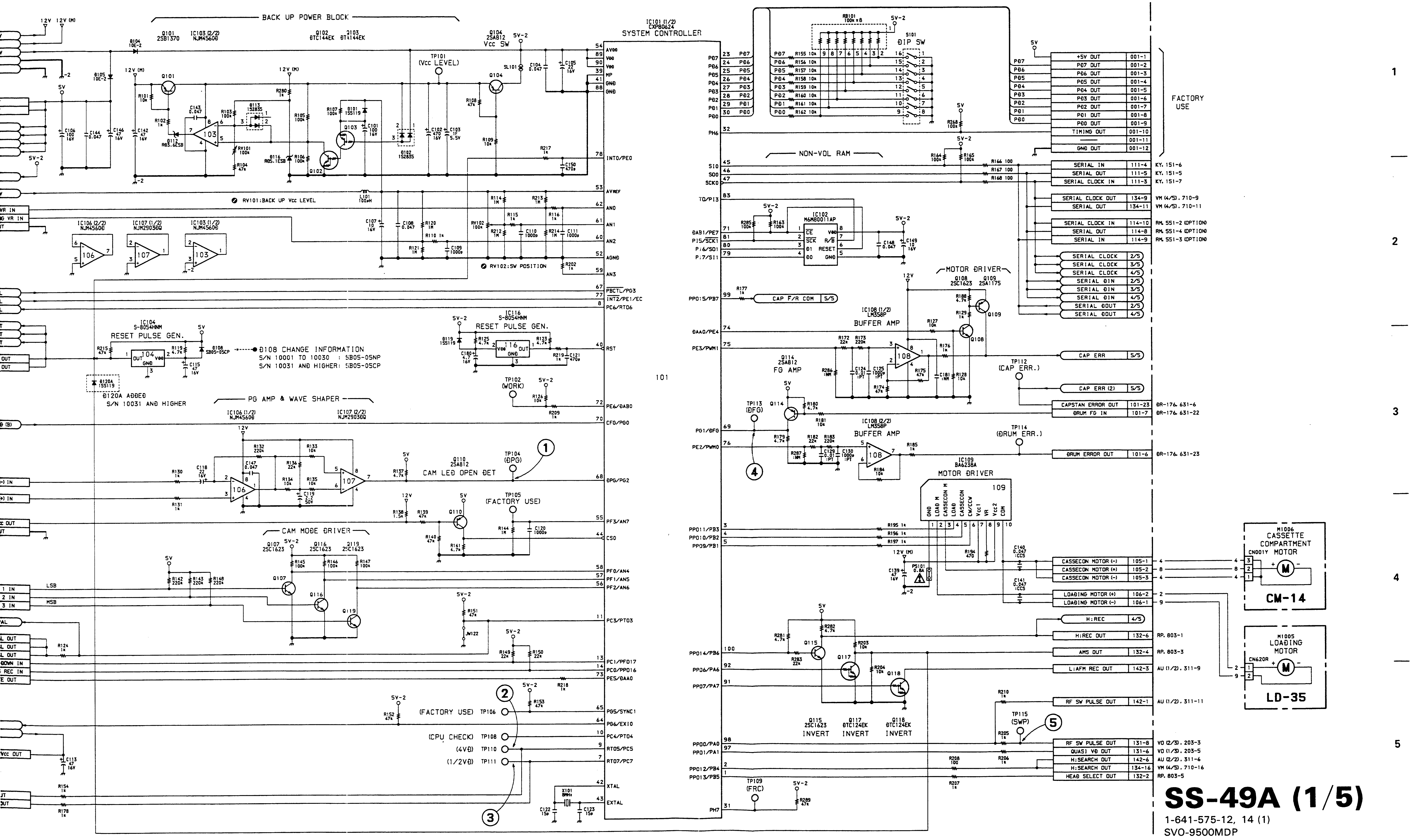


Measurement Condition

PB mode: KRV-45HPS

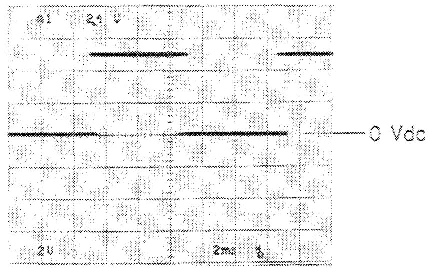

BACK UP POWER BLOCK
IC101 (1/2) CXP80624 SYSTEM CONTROLLER
TP101 (Vcc LEVEL)
RV101: BACK UP Vcc LEVEL
RV102: SW POSITION
IC104 S-8054HNM RESET PULSE GEN.
IC116 S-8054HNM RESET PULSE GEN.
D108 CHANGE INFORMATION
S/N 10001 TO 10030 : SB05-05NP
S/N 10031 AND HIGHER: SB05-05CP
D120A ADDED S/N 10031 AND HIGHER
TP102 (WORK)
FG AMP & WAVE SHAPER
CAM LED OPEN DET
TP104 (DFG)
TP105 (FACTORY USE)
CAM MODE DRIVER
(FACTORY USE) TP106
(CPU CHECK) TP108
(4VD) TP110
(1/2VD) TP111
FG AMP
TP113 (DFG)
TP109 (FRC)
CAP F/R COM
NON-
REG 12V
12V (M)
REG 5.8V
GND (M)
GND
5V OUT
5V
5V-2
REG 5.3V
TRACKING VR IN
SLOW TRACKING VR IN
GND OUT
SERVO CTL
COUNT CTL
REC CTL
L:RESET
L:RESET OUT
CAPSTAN FG (B)
DRUM PG (+) IN
DRUM PG (-) IN
CAM LED Vcc OUT
CAM MODE 1 IN
CAM MODE 2 IN
CAM MODE 3 IN
H:NT/L:PAL
H:NT/L:PAL OUT
L:CASSETTE DOWN IN
L:C-IN/MISS REC IN
L:AFM MUTE OUT
L-ADJ
FG 5V
CAPSTAN FG Vcc OUT
4VD OUT
1/2VD OUT

NOTE:
The ⚠-marked components are critical to safety.
Replace only with same components as specified.

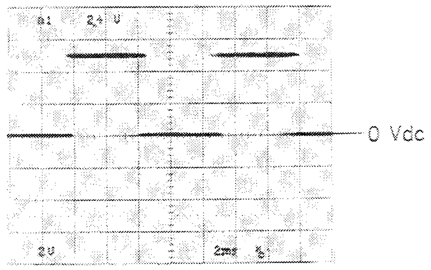

BACK UP POWER BLOCK
IC101 (1/2)
CXP80624
SYSTEM CONTROLLER
NON-VOL RAM
IC102
M6M80011AP
S101
DIP SW
RB101
100k×8
FACTORY USE
MOTOR DRIVER
IC108 (1/2)
LM358P
BUFFER AMP
IC108 (2/2)
LM358P
BUFFER AMP
IC109
BA6238A
MOTOR DRIVER
Q114
2SA812
FG AMP
IC104
S-8054HNM
RESET PULSE GEN.
IC116
S-8054HNM
RESET PULSE GEN.
D108 CHANGE INFORMATION
S/N 10001 TO 10030 : SB05-05NP
S/N 10031 AND HIGHER: SB05-05CP
D120A ADDED
S/N 10031 AND HIGHER
PG AMP & WAVE SHAPER
CAM LED OPEN DET
CAM MODE DRIVER
RV101:BACK UP Vcc LEVEL
RV102:SW POSITION
TP101 (Vcc LEVEL)
TP102 (WORK)
TP104 (DPG)
TP105 (FACTORY USE)
TP106 (FACTORY USE)
TP108 (CPU CHECK)
TP110 (4VD)
TP111 (1/2VD)
TP109 (FRC)
TP112 (CAP ERR.)
TP113 (DFG)
TP114 (DRUM ERR.)
TP115 (SWP)
Q115 2SC1623 INVERT
Q117 DTC124EK INVERT
Q118 DTC124EK INVERT
M1006
CASSETTE COMPARTMENT MOTOR
CM-14
M1005
LOADING MOTOR
LD-35
SERIAL IN
SERIAL OUT
SERIAL CLOCK IN
CAP ERR
CAP ERR (2)
CAPSTAN ERROR OUT
DRUM FG IN
DRUM ERROR OUT
CASSECON MOTOR (-)
CASSECON MOTOR (+)
LOADING MOTOR (+)
LOADING MOTOR (-)
H:REC
H:REC OUT
AMS OUT
L:AFM REC OUT
RF SW PULSE OUT
QUASI VD OUT
H:SEARCH OUT
HEAD SELECT OUT
SS-49A (1/5)
1-641-575-12, 14 (1)
SVO-9500MDP

SS-49A (2/5), DUS-445

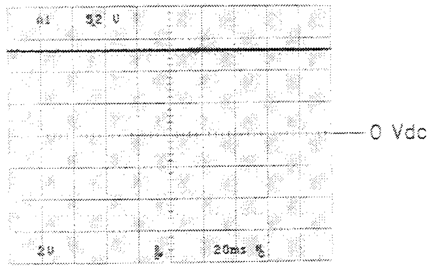
① CN151 pin 4 (A-5) PB mode



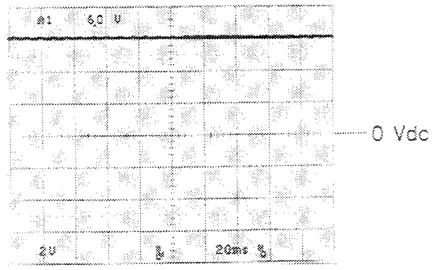
② CN151 pin 5 (A-5) PB mode



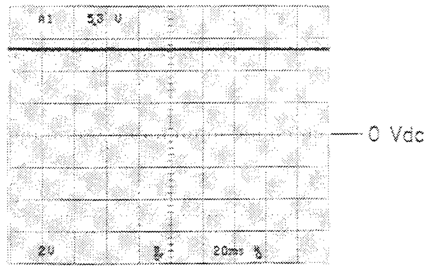
③ TP314 (C-2) PB mode



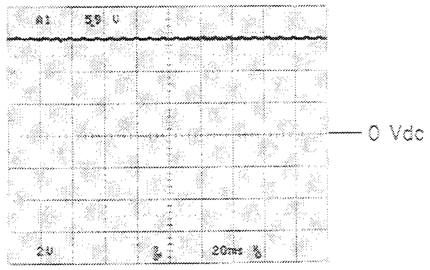
④ TP313 (D-3) PB mode



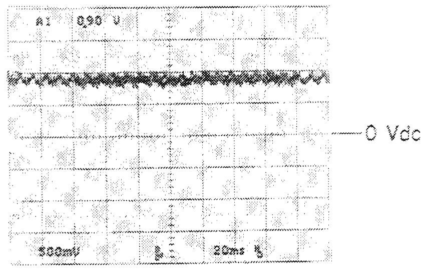
⑤ TP305 (B-3) PB mode



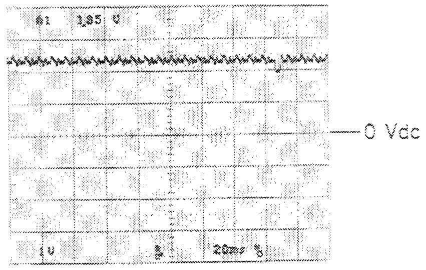
⑥ TP307 (C-2) PB mode



⑦ TP306 (B-2) PB mode



⑧ TP308 (B-3) PB mode



Measurement Condition
PB mode: KRV-45HPS

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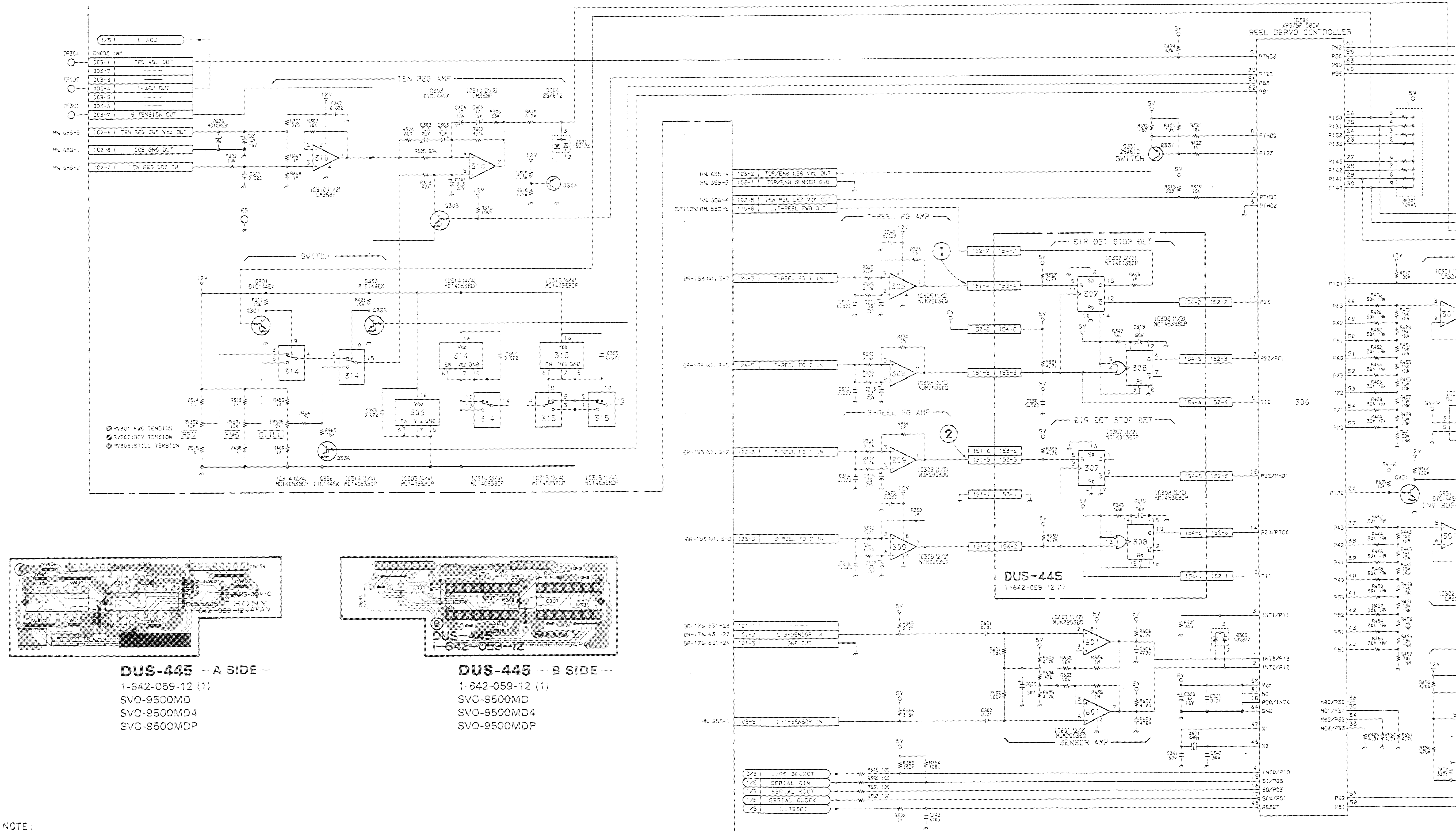
SS-49A (2/5), DUS-445

SS-49A (2/5) ; REEL SERVO CONTROL
DUS-445

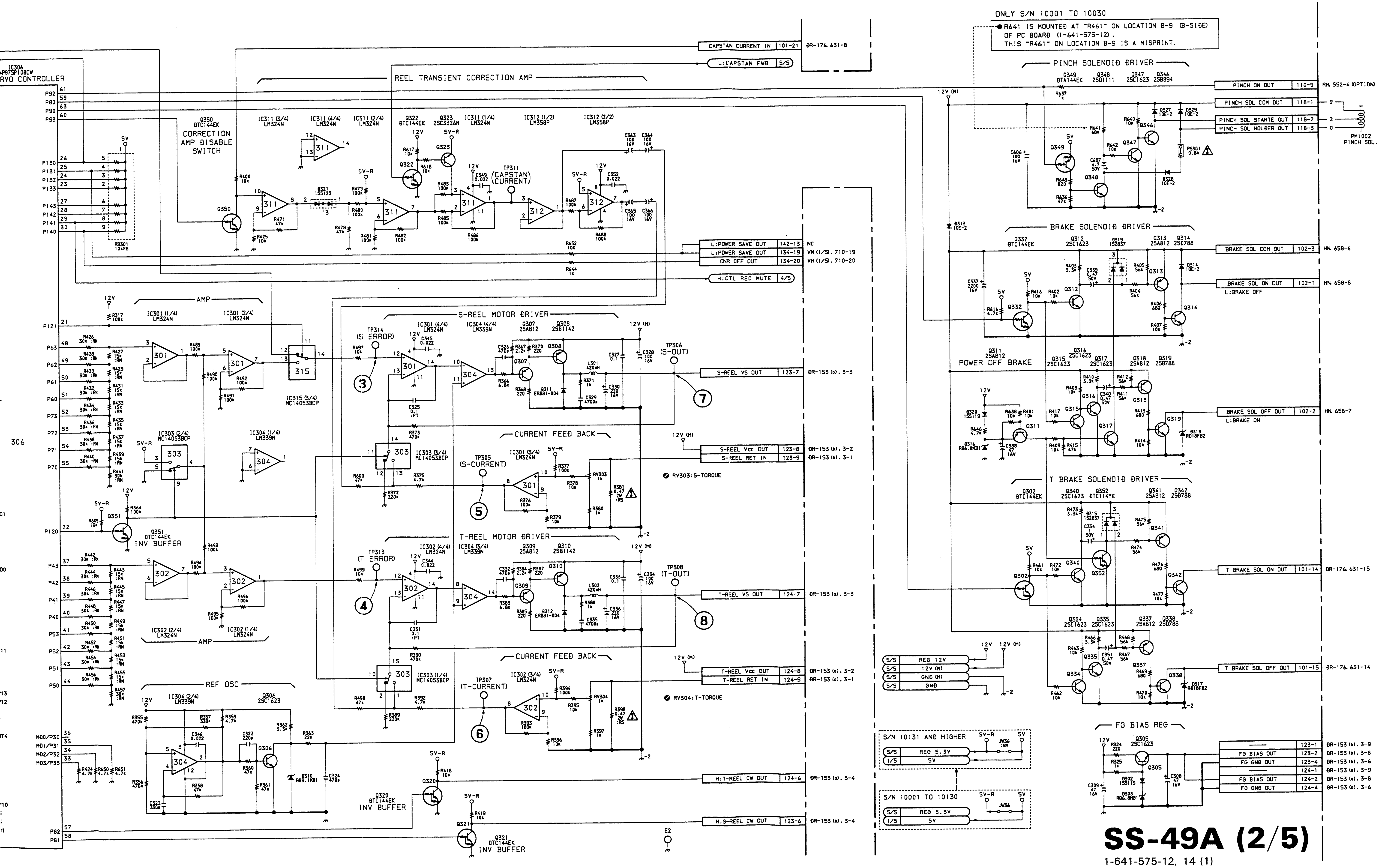

L-ADJ
CN002 :NM
TRQ ADJ OUT
L-ADJ OUT
S TENSION OUT
TEN REG DDS Vcc OUT
DDS GND OUT
TEN REG DDS IN
TEN REG AMP
SWITCH
RV301:FWD TENSION
RV302:REV TENSION
RV303:STILL TENSION
REV
FWD
STILL
TOP/END LED Vcc OUT
TOP/END SENSOR GND
TEN REG LED Vcc OUT
L/T-REEL FWD OUT
T-REEL FG AMP
T-REEL FG 1 IN
T-REEL FG 2 IN
S-REEL FG AMP
S-REEL FG 1 IN
S-REEL FG 2 IN
DIR DET STOP DET
①
②
DUS-445
1-642-059-12 (1)
IC306
REEL SERVO CONTROLLER
SWITCH
L/S-SENSOR IN
GND OUT
L/T-SENSOR IN
SENSOR AMP
LIRS SELECT
SERIAL DIN
SERIAL DOUT
SERIAL CLOCK
L/RESET
INV BUF
DUS-445 A SIDE
1-642-059-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP
DUS-445 B SIDE
1-642-059-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

NOTE :
The ⚠-marked components are critical to safety.
Replace only with same components as specified.

13-41

SS-49A (2/5), DUS-445

ONLY S/N 10001 TO 10030
R641 IS MOUNTED AT "R461" ON LOCATION B-9 (B-SIDE) OF PC BOARD (1-641-575-12).
THIS "R461" ON LOCATION B-9 IS A MISPRINT.

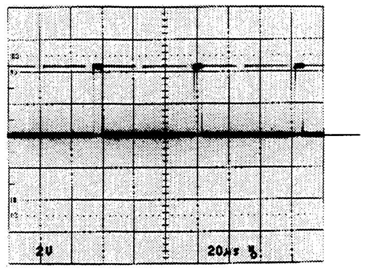

IC306 µPD75P108CW SERVO CONTROLLER
REEL TRANSIENT CORRECTION AMP
Q350 DTC144EK CORRECTION AMP DISABLE SWITCH
IC311 (3/4) LM324N
IC311 (4/4) LM324N
IC311 (2/4) LM324N
IC311 (1/4) LM324N
IC312 (1/2) LM358P
IC312 (2/2) LM358P
Q322 DTC144EK
Q323 2SC3326N
TP311 (CAPSTAN CURRENT)
CAPSTAN CURRENT IN 101-21
L:CAPSTAN FWD 5/5
L:POWER SAVE OUT 142-13
L:POWER SAVE OUT 134-19
CNR OFF OUT 134-20
H:CTL REC MUTE 4/5
AMP
IC301 (1/4) LM324N
IC301 (2/4) LM324N
IC315 (3/4) MC14053BCP
IC303 (2/4) MC14053BCP
IC304 (1/4) LM339N
Q351 DTC144EK INV BUFFER
S-REEL MOTOR DRIVER
TP314 (S ERROR)
IC301 (4/4) LM324N
IC304 (4/4) LM339N
Q307 2SA812
Q308 2SB1142
TP306 (S-OUT)
S-REEL VS OUT 123-7
CURRENT FEED BACK
TP305 (S-CURRENT)
IC303 (3/4) MC14053BCP
IC301 (3/4) LM324N
S-REEL Vcc OUT 123-8
S-REEL RET IN 123-9
RV303:S-TORQUE
T-REEL MOTOR DRIVER
TP313 (T ERROR)
IC302 (4/4) LM324N
IC304 (3/4) LM339N
Q309 2SA812
Q310 2SB1142
TP308 (T-OUT)
T-REEL VS OUT 124-7
IC302 (2/4) LM324N
IC302 (1/4) LM324N
TP307 (T-CURRENT)
IC303 (1/4) MC14053BCP
IC302 (3/4) LM324N
T-REEL Vcc OUT 124-8
T-REEL RET IN 124-9
RV304:T-TORQUE
REF OSC
IC304 (2/4) LM339N
Q306 2SC1623
Q320 DTC144EK INV BUFFER
Q321 DTC144EK INV BUFFER
H:T-REEL CW OUT 124-6
H:S-REEL CW OUT 123-6
E2
PINCH SOLENOID DRIVER
Q349 DTA144EK
Q348 2SD1111
Q347 2SC1623
Q346 2SD894
PINCH ON OUT 110-9
PINCH SOL COM OUT 118-1
PINCH SOL STARTE OUT 118-2
PINCH SOL HOLDER OUT 118-3
PM1002 PINCH SOL.
BRAKE SOLENOID DRIVER
Q332 DTC144EK
Q312 2SC1623
Q319 1SS237
Q313 2SA812
Q314 2SD788
BRAKE SOL COM OUT 102-3
BRAKE SOL ON OUT 102-1
L:BRAKE OFF
POWER OFF BRAKE
Q311 2SA812
Q315 2SC1623
Q316 2SC1623
Q317 2SC1623
Q318 2SA812
Q319 2SD788
BRAKE SOL OFF OUT 102-2
L:BRAKE ON
T BRAKE SOLENOID DRIVER
Q302 DTC144EK
Q340 2SC1623
Q352 DTC114YK
Q341 2SA812
Q342 2SD788
T BRAKE SOL ON OUT 101-14
Q334 2SC1623
Q335 2SC1623
Q337 2SA812
Q338 2SD788
T BRAKE SOL OFF OUT 101-15
REG 12V
12V (M)
GND (M)
GND
S/N 10131 AND HIGHER
REG 5.3V
5V
S/N 10001 TO 10130
FG BIAS REG
Q305 2SC1623
FG BIAS OUT 123-2
FG GND OUT 123-4
FG BIAS OUT 124-2
FG GND OUT 124-4

SS-49A (2/5)

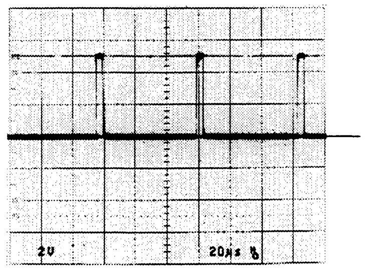
1-641-575-12, 14 (1)
SVO-9500MDP

SS-49A (3/5); CNR & FRAME MEMORY INDICATE INTERFACE

① CN134 pin 13 (E-9) STOP (E-E) mode



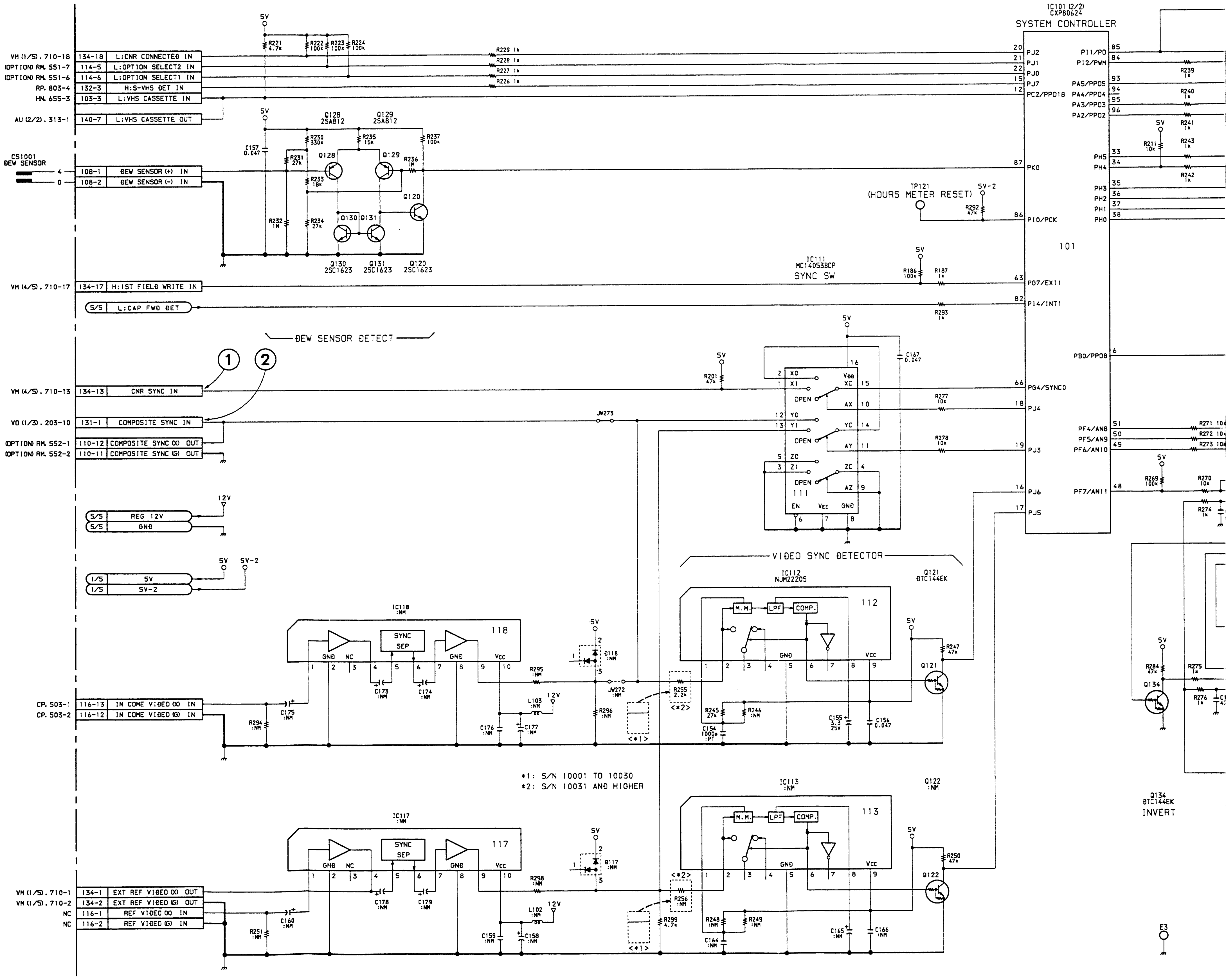
② CN131 pin 1 (L-4) STOP (E-E) mode



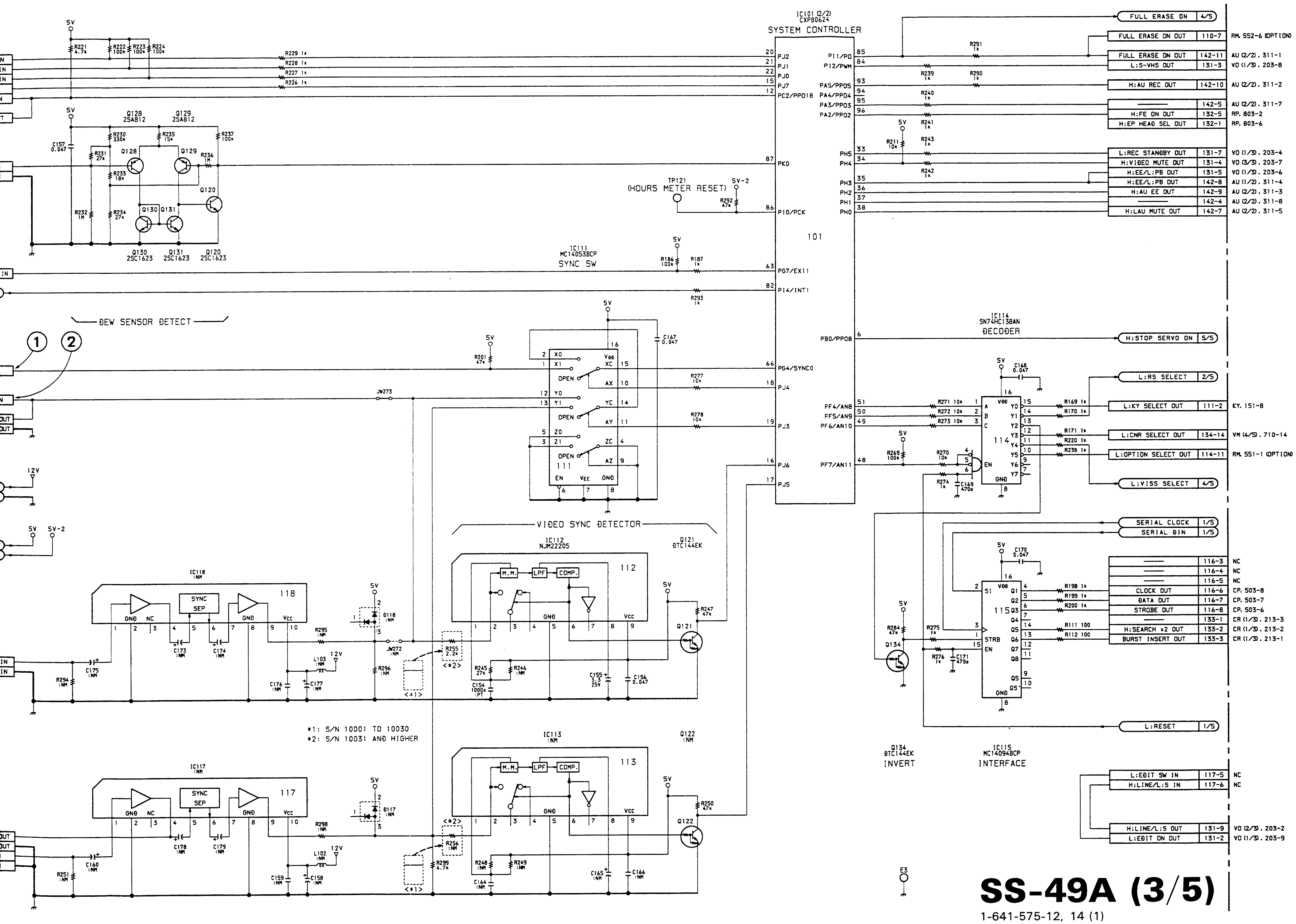
Measurement Condition

S-VIDEO IN: 75% color bars

STOP (E-E) mode: S-VHS


VM (1/5). 710-18
134-18 L:CNR CONNECTED IN
114-5 L:OPTION SELECT2 IN
114-6 L:OPTION SELECT1 IN
132-3 H:S-VHS DET IN
103-3 L:VHS CASSETTE IN
140-7 L:VHS CASSETTE OUT
CS1001 DEW SENSOR
108-1 DEW SENSOR (+) IN
108-2 DEW SENSOR (-) IN
134-17 H:1ST FIELD WRITE IN
L:CAP FWD DET
DEW SENSOR DETECT
134-13 CNR SYNC IN
131-1 COMPOSITE SYNC IN
110-12 COMPOSITE SYNC (X) OUT
110-11 COMPOSITE SYNC (G) OUT
REG 12V
GND
5V
5V-2
116-13 IN COME VIDEO (X) IN
116-12 IN COME VIDEO (G) IN
134-1 EXT REF VIDEO (X) OUT
134-2 EXT REF VIDEO (G) OUT
116-1 REF VIDEO (X) IN
116-2 REF VIDEO (G) IN
Q128 2SA812
Q129 2SA812
Q130 2SC1623
Q131 2SC1623
Q120 2SC1623
IC101 (2/2) CXP80624 SYSTEM CONTROLLER
TP121 (HOURS METER RESET)
IC111 MC14053BCP SYNC SW
IC118 :NM
SYNC SEP
IC117 :NM
VIDEO SYNC DETECTOR
IC112 NJM2220S
IC113 :NM
M.M.
LPF
COMP.
Q121 DTC144EK
Q122 :NM
Q134 DTC144EK INVERT
*1: S/N 10001 TO 10030
*2: S/N 10031 AND HIGHER

13-43

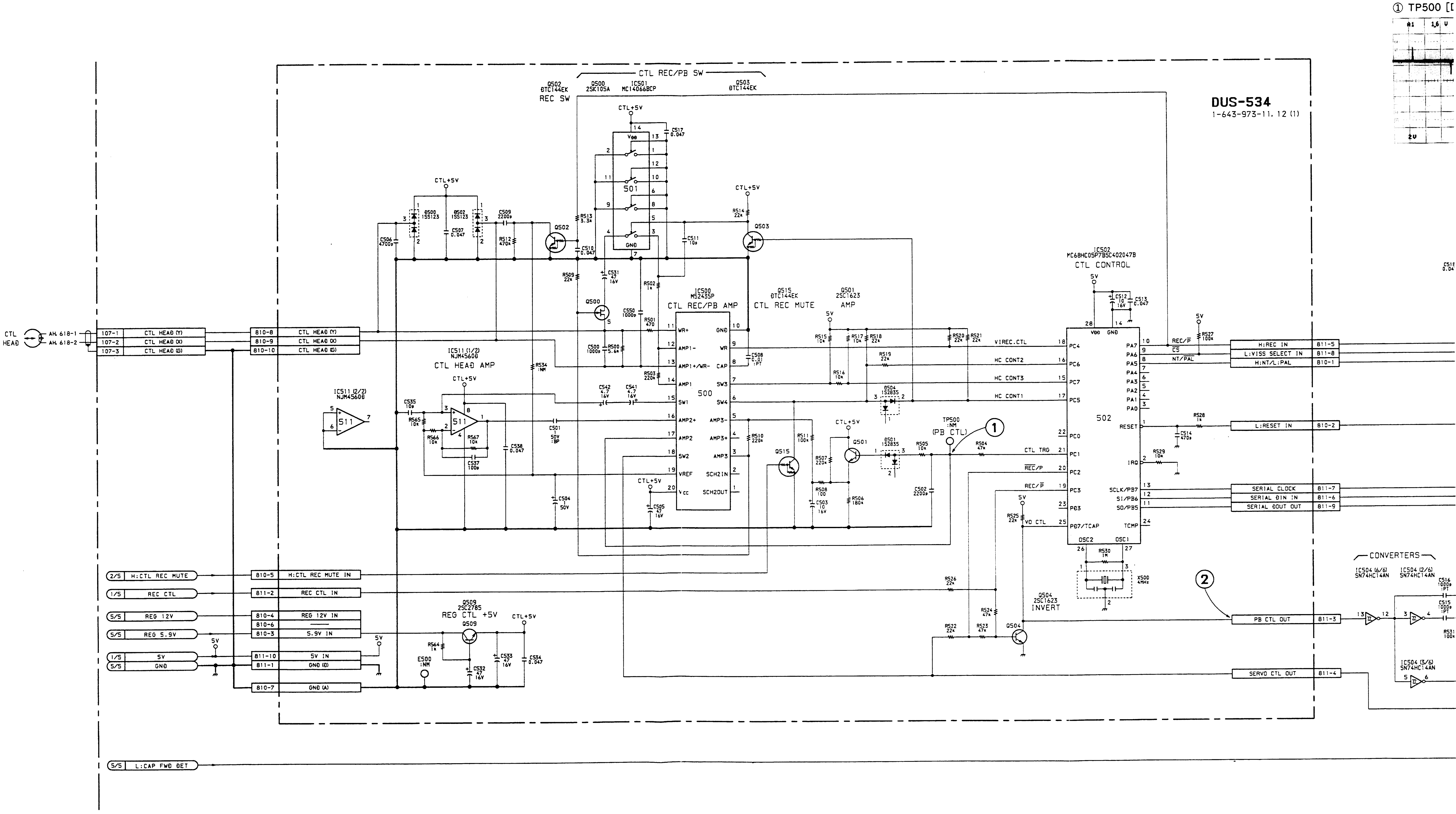

IC101 (2/2)
CXP80624
SYSTEM CONTROLLER
101
P11/P0
P12/PWM
PA5/PP05
PA4/PP04
PA3/PP03
PA2/PP02
PH5
PH4
PH3
PH2
PH1
PH0
PJ2
PJ1
PJ0
PJ7
PC2/PP018
PK0
P10/PCK
PG7/EXI1
P14/INT1
PB0/PP08
PG4/SYNC0
PJ4
PJ3
PF4/AN8
PF5/AN9
PF6/AN10
PF7/AN11
PJ6
PJ5
TP121
(HOURS METER RESET)
SV-2
5V
12V
Q128 2SA812
Q129 2SA812
Q130 2SC1623
Q131 2SC1623
Q120 2SC1623
DEW SENSOR DETECT
①
②
IC111
MC14053BCP
SYNC SW
111
X0
X1
Y0
Y1
Z0
Z1
OPEN
XC
AX
YC
AY
ZC
AZ
EN
VDD
VEE
GND
JW273
JW272
IC114
SN74HC138AN
DECODER
114
IC115
MC14094BCP
INTERFACE
115
Q134
DTC144EK
INVERT
VIDEO SYNC DETECTOR
IC112
NJM2220S
112
M.M.
LPF
COMP.
Q121
DTC144EK
IC113
:NM
113
Q122
:NM
IC118
:NM
118
IC117
:NM
117
SYNC SEP
GND
NC
Vcc
D118 :NM
D117 :NM
L103 :NM
L102 :NM
<*1>
<*2>
*1: S/N 10001 TO 10030
*2: S/N 10031 AND HIGHER
FULL ERASE ON 4/5
FULL ERASE ON OUT 110-7 RM. SS2-6 (OPTION)
FULL ERASE ON OUT 142-11 AU (2/2). 311-1
L:S-VHS OUT 131-3 VO (1/3). 203-8
H:AU REC OUT 142-10 AU (2/2). 311-2
142-5 AU (2/2). 311-7
H:FE ON OUT 132-5 RP. 803-2
H:EP HEAD SEL OUT 132-1 RP. 803-6
L:REC STANDBY OUT 131-7 VO (1/3). 203-4
H:VIDEO MUTE OUT 131-4 VO (3/3). 203-7
H:EE/L:PB OUT 131-5 VO (1/3). 203-6
H:EE/L:PB OUT 142-8 AU (1/2). 311-4
H:AU EE OUT 142-9 AU (2/2). 311-3
142-4 AU (2/2). 311-8
H:LAU MUTE OUT 142-7 AU (2/2). 311-5
H:STOP SERVO ON 5/5
L:RS SELECT 2/5
L:KY SELECT OUT 111-2 KY. 151-8
L:CNR SELECT OUT 134-14 VM (4/5). 710-14
L:OPTION SELECT OUT 114-11 RM. SS1-1 (OPTION)
L:VISS SELECT 4/5
SERIAL CLOCK 1/5
SERIAL DIN 1/5
116-3 NC
116-4 NC
116-5 NC
CLOCK OUT 116-6 CP. 503-8
DATA OUT 116-7 CP. 503-7
STROBE OUT 116-8 CP. 503-6
133-1 CR (1/3). 213-3
H:SEARCH ×2 OUT 133-2 CR (1/3). 213-2
BURST INSERT OUT 133-3 CR (1/3). 213-1
L:RESET 1/5
L:EDIT SW IN 117-5 NC
H:LINE/L:S IN 117-6 NC
H:LINE/L:S OUT 131-9 VO (2/3). 203-2
L:EDIT ON OUT 131-2 VO (1/3). 203-9
E3
1
2
3
4
5

SS-49A (3/5)

1-641-575-12, 14 (1)
SVO-9500MDP

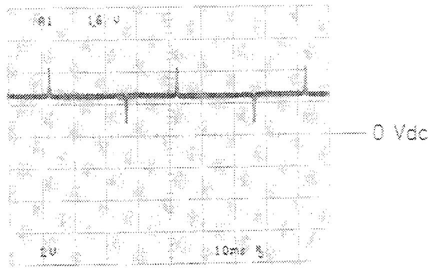
SS-49A (4/5), DUS-534

DUS-534 ; VISS CONTROL CTL HEAD AMP
SS-49 (4/5)

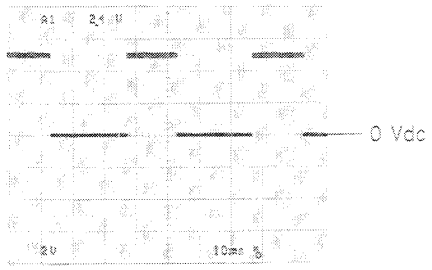

① TP500
DUS-534
1-643-973-11. 12 (1)
CTL REC/PB SW
Q502 DTC144EK REC SW
Q500 2SK105A
IC501 MC14066BCP
Q503 DTC144EK
CTL+5V
501
IC500 M52435P CTL REC/PB AMP
500
Q515 DTC144EK CTL REC MUTE
Q501 2SC1623 AMP
IC502 MC68HC05P7BSC402047B CTL CONTROL
502
IC511 (1/2) NJM4560B CTL HEAD AMP
IC511 (2/2) NJM4560B
511
CTL HEAD
CTL HEAD (Y)
CTL HEAD (X)
CTL HEAD (G)
TP500 :NM (PB CTL)
①
②
VIREC.CTL
HC CONT2
HC CONT3
HC CONT1
CTL TRG
REC/P
VD CTL
H:REC IN
L:VISS SELECT IN
H:NT/L:PAL
L:RESET IN
SERIAL CLOCK
SERIAL DIN IN
SERIAL DOUT OUT
PB CTL OUT
SERVO CTL OUT
Q504 2SC1623 INVERT
CONVERTERS
IC504 (6/6) SN74HC14AN
IC504 (2/6) SN74HC14AN
IC504 (5/6) SN74HC14AN
Q509 2SC2785 REG CTL +5V
H:CTL REC MUTE
H:CTL REC MUTE IN
REC CTL
REC CTL IN
REG 12V
REG 12V IN
REG 5.9V
5.9V IN
5V
5V IN
GND
GND (D)
GND (A)
L:CAP FWD DET
X500 4MHz
E500 :NM

13-45

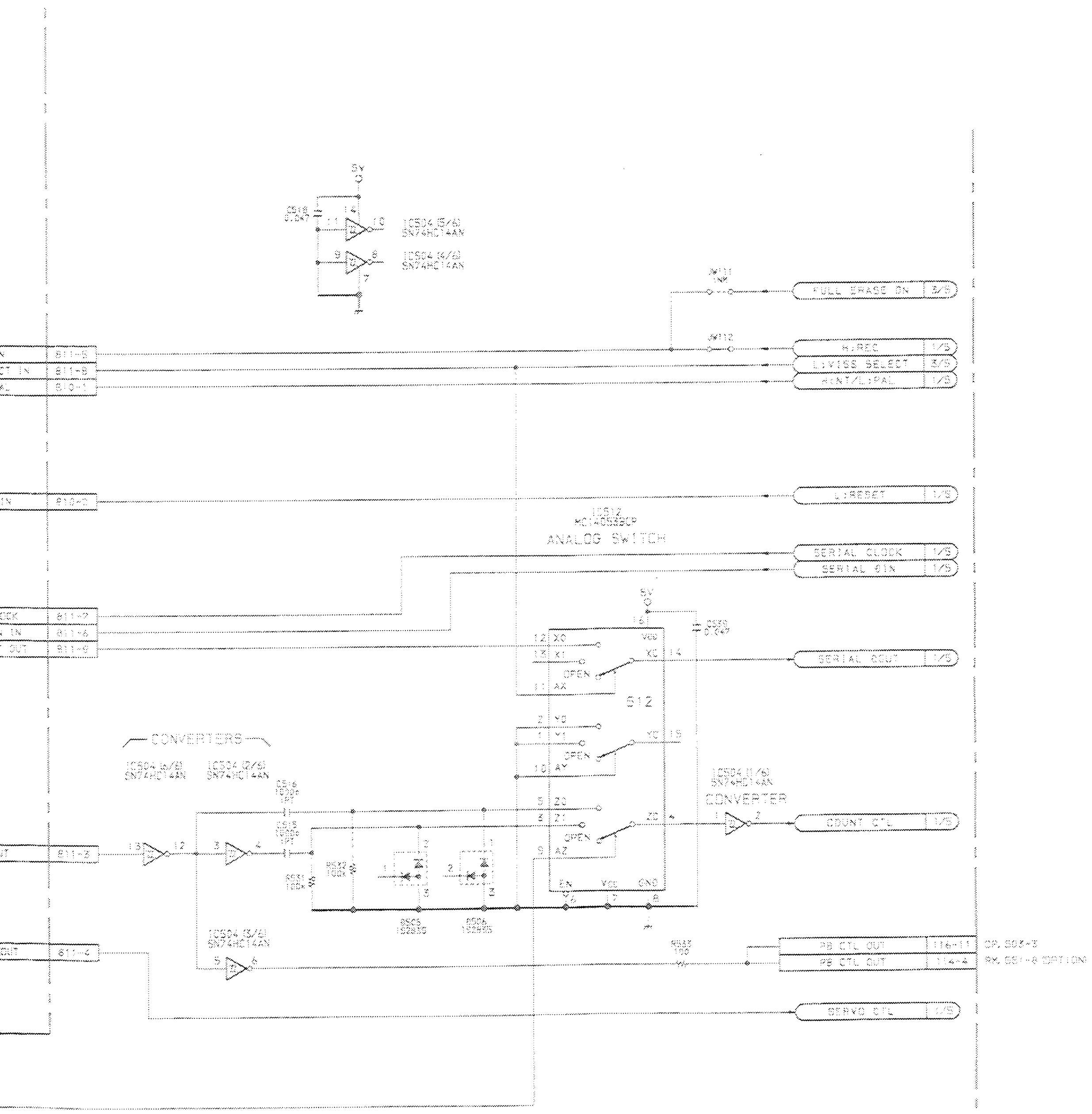
① TP500 [DUS-534 (C-1)] PB mode



② CN811 pin 3 (F-4) PB mode

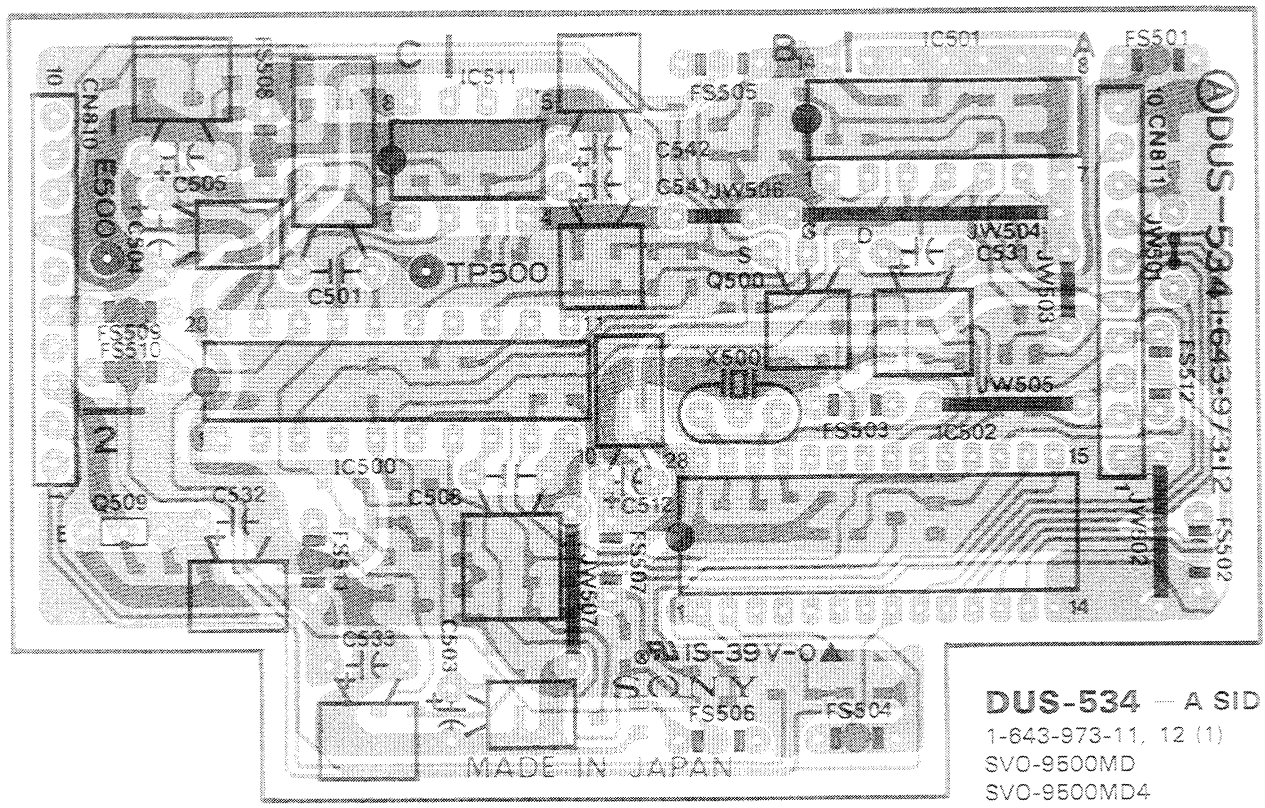


Measurement Condition
PB mode: KRV-45HPS

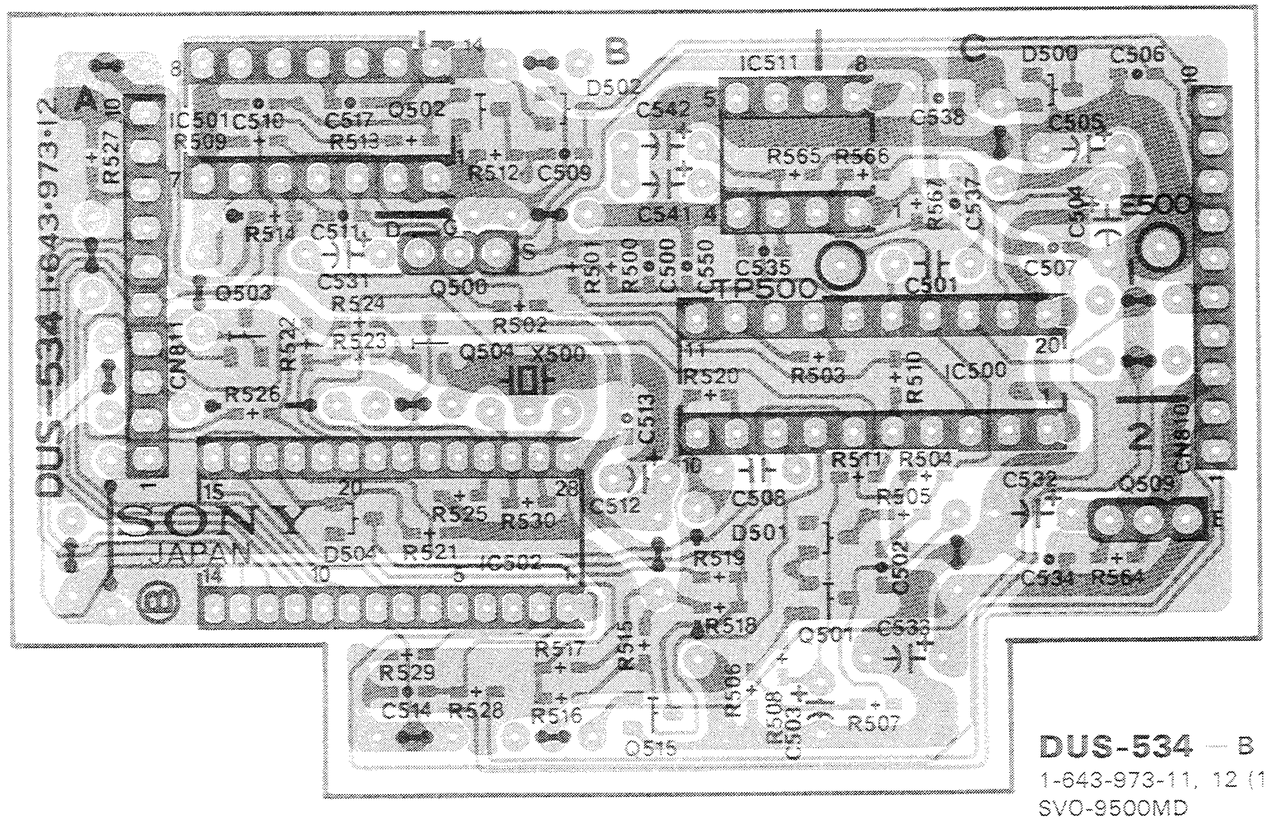

5V
C518 0.047
IC504 (5/6) SN74HC14AN
IC504 (4/6) SN74HC14AN
JW111 1NM
JW112
FULL ERASE ON 3/5
H:REC 1/5
L:VISS SELECT 3/5
H:NT/L:PAL 1/5
811-5
811-8
810-1
810-0
L:RESET 1/5
IC512 MC14053BCP
ANALOG SWITCH
SERIAL CLOCK 1/5
SERIAL SIN 1/5
811-7
811-6
811-9
C539 0.047
X0
X1
AX
VDD
XC
OPEN
512
Y0
Y1
AY
YC
Z0
Z1
AZ
ZC
EN
VEE
GND
SERIAL SOUT 1/5
CONVERTERS
IC504 (6/6) SN74HC14AN
IC504 (2/6) SN74HC14AN
C516 1000p
C515 1000p
R531 100k
R532 100k
D505 1SS355
D506 1SS355
IC504 (1/6) SN74HC14AN
CONVERTER
COUNT CTL 1/5
811-3
811-4
IC504 (3/6) SN74HC14AN
R533 100
PB CTL OUT 116-11
PB CTL OUT 114-4
OP. 503-3
RM. 531-8 (OPTION)
SERVO CTL 1/5

SS-49A (4/5)

1-641-575-12, 14 (1)
SVO-9500MDP


C
B
A
IC511
IC501
FS501
FS508
CN810
E500
C505
C504
C501
TP500
C542
C541
JW506
FS505
Q500
S
G
D
JW504
C531
JW503
CN811
JW501
FS512
FS509
FS510
X500
FS503
IC502
JW505
IC500
C508
C512
C532
Q509
FS511
JW507
FS507
C533
C503
JW502
FS502
IS-39V-0
SONY
MADE IN JAPAN
FS506
FS504
DUS-534 1-643-973-12
2

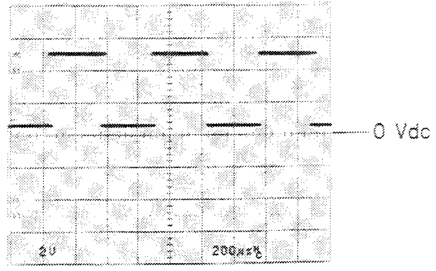
DUS-534 — A SIDE —
1-643-973-11, 12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


A
B
C
IC501
C510
C517
Q502
R509
R513
R512
C509
D502
C542
IC511
R565
R566
C538
D500
C506
C505
E500
R527
R514
C511
D
G
S
C541
R501
R500
C500
C550
C535
TP500
R563
C537
C504
C501
C507
Q503
C531
R524
Q500
R502
R532
R523
Q504
X500
CN811
R526
R520
R503
R510
IC500
C513
R511
R504
R505
C532
Q509
CN810
C512
C508
D501
R525
R530
D504
R521
IC502
R519
C502
C534
R564
R518
Q501
C533
R529
R517
R515
C514
R528
R516
R506
R508
C503
R507
Q515
SONY
JAPAN
DUS-534 1-643-973-12
2

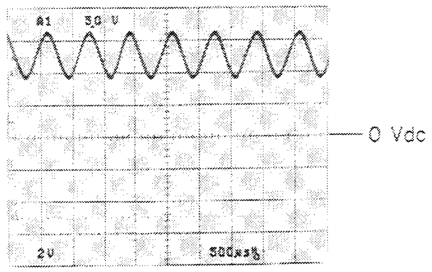
DUS-534 — B SIDE —
1-643-973-11, 12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

SS-49A (5/5) ; CAPSTAN FG AMP POWER BLOCK

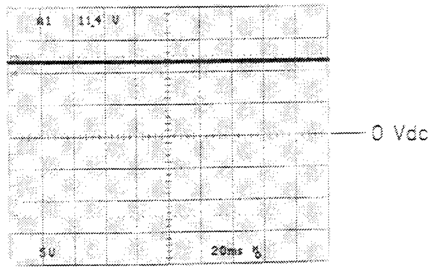
① TP103 (K-9) PB mode



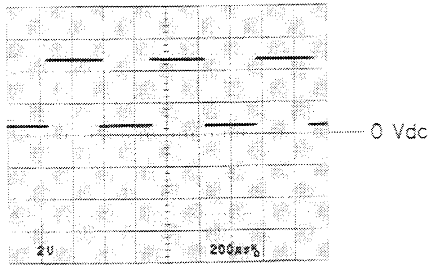
② TP503 (K-9) PB mode



③ TP504 (K-9) PB mode

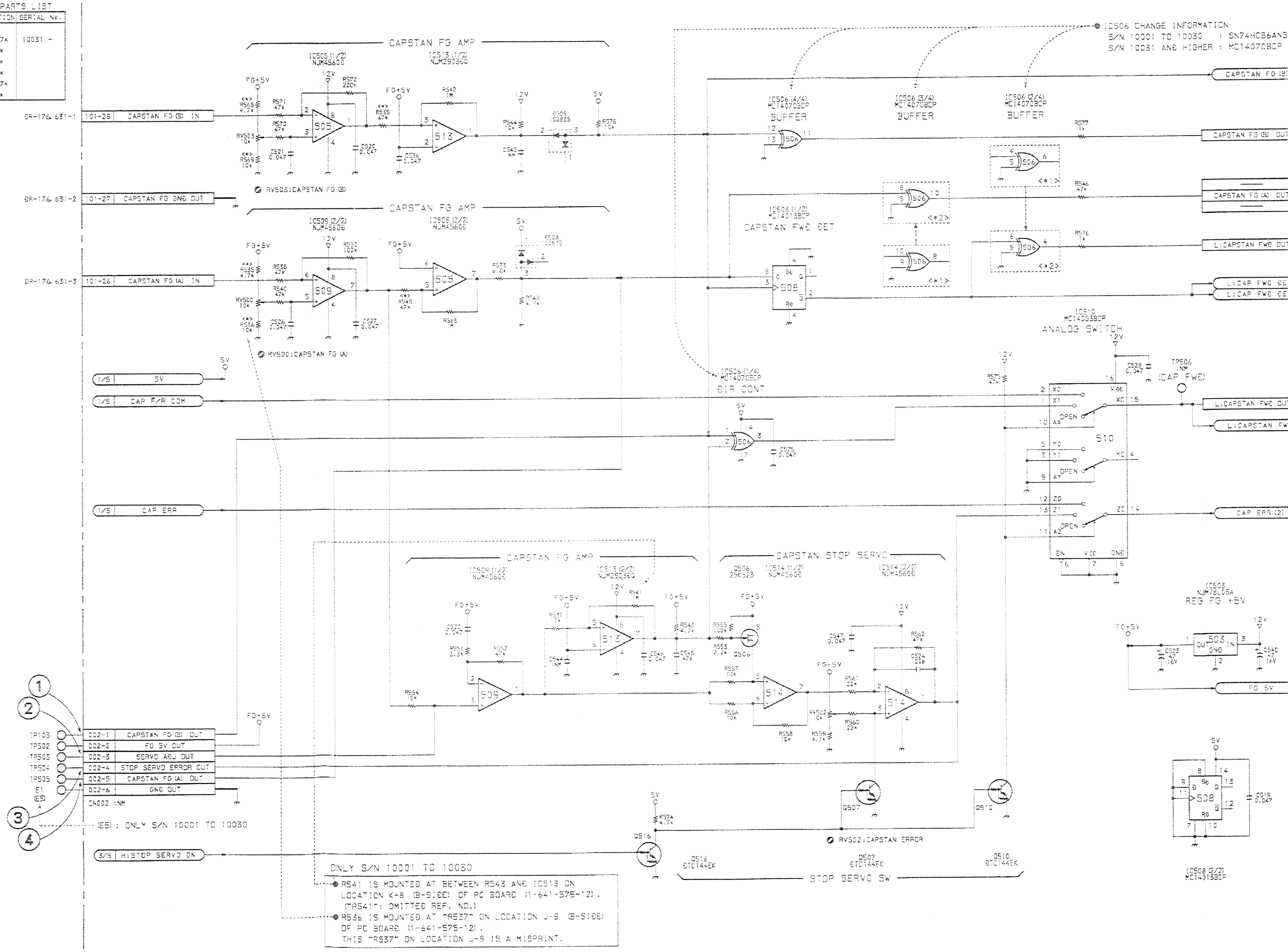


④ TP505 (K-9) PB mode



NOTE: <*>: CHANGED PARTS LIST

ADDRESS	CHANGE INFORMATION	SERIAL No.
	CHANGED	
D-2	R535 1k → 4.7k	10031 ~
D-2	R536 1k → 10k	
E-2	R539 10k → 47k	
E-2	R549 10k → 47k	
D-1	R568 1k → 4.7k	
D-2	R569 1k → 10k	


CAPSTAN FG AMP
IC505 (1/2) NJM4560D
IC513 (1/2) NJM2903D
FG+5V
12V
5V
R572 220k
R571 47k
R570 47k
RV503 10k
C521 0.047
C520 0.047
C524 0.047
R542 1M
R544 10k
D505 1SS355
R576 10k
RV503:CAPSTAN FG (B)
CAPSTAN FG AMP
IC509 (2/2) NJM4560D
IC505 (2/2) NJM4560D
D528 1SS355
R538 47k
R540 47k
R573 10k
R563 1M
RV500 10k
C526 0.047
C527 0.047
RV500:CAPSTAN FG (A)
DR-176 631-1
DR-176 631-2
DR-176 631-3
101-28 CAPSTAN FG (B) IN
101-27 CAPSTAN FG GND OUT
101-26 CAPSTAN FG (A) IN
1/5 5V
1/5 CAP F/R COM
1/5 CAP ERR
IC506 CHANGE INFORMATION
S/N 10001 TO 10030 : SN74HC86ANS
S/N 10031 AND HIGHER : MC14070BCP
IC506 (4/4) MC14070BCP BUFFER
IC506 (3/4) MC14070BCP BUFFER
IC506 (2/4) MC14070BCP BUFFER
IC508 (1/2) MC14013BCP CAPSTAN FWD SET
IC506 (1/4) MC14070BCP DIR CONT
R577 1k
R546 47k
R576 1k
<*1>
<*2>
CAPSTAN FG (B)
CAPSTAN FG (B) OUT
CAPSTAN FG (A) OUT
L:CAPSTAN FWD OUT
L:CAP FWD SET
IC510 MC14053BCP ANALOG SWITCH
C528 0.047
TP506 (NM) (CAP FWD)
R575 47k
OPEN
L:CAPSTAN FWD OUT
CAP ERR (2)
CAPSTAN FG AMP
IC509 (1/2) NJM4560D
IC513 (2/2) NJM2903D
CAPSTAN STOP SERVO
Q506 2SA1523
IC514 (1/2) NJM4560D
IC514 (2/2) NJM4560D
RV502:CAPSTAN ERROR
Q507 DTC144EK
Q510 DTC144EK
Q516 DTC144EK
STOP SERVO SW
IC503 NJM78L05A REG FG +5V
FG 5V
IC508 (2/2) MC14013BCP
①
②
③
④
TP103
TP502
TP503
TP504
TP505
E1 (E5)
002-1 CAPSTAN FG (B) OUT
002-2 FG 5V OUT
002-3 SERVO ADJ OUT
002-4 STOP SERVO ERROR OUT
002-5 CAPSTAN FG (A) OUT
002-6 GND OUT
CN002 :NM
(E5) : ONLY S/N 10001 TO 10030
3/5 H:STOP SERVO ON

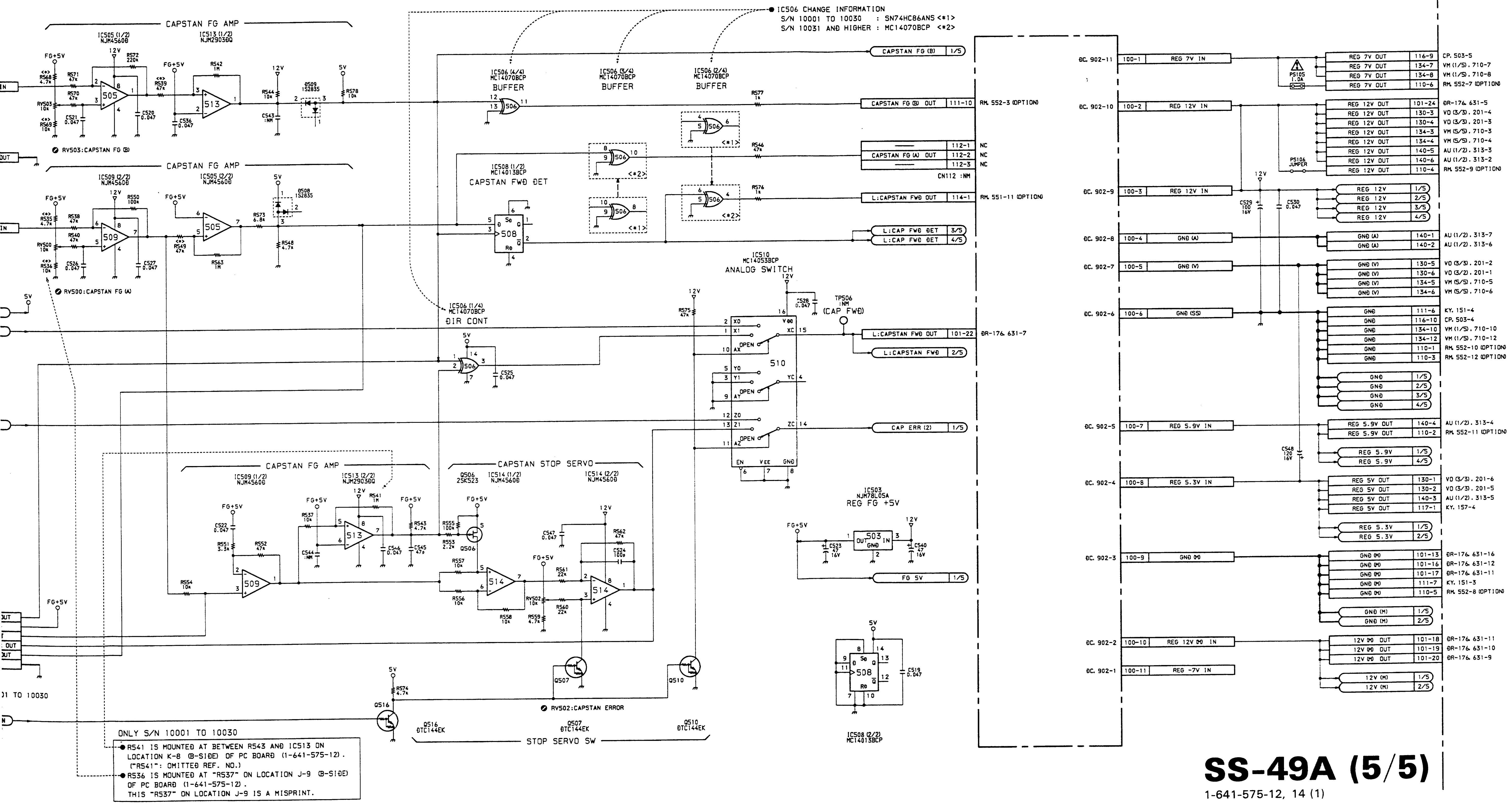
ONLY S/N 10001 TO 10030

- R541 IS MOUNTED AT BETWEEN R543 AND IC513 ON LOCATION K-8 (B-SIDE) OF PC BOARD (1-641-575-12). ("R541": OMITTED REF. NO.)
- R536 IS MOUNTED AT "R537" ON LOCATION J-9 (B-SIDE) OF PC BOARD (1-641-575-12). THIS "R537" ON LOCATION J-9 IS A MISPRINT.

Measurement Condition
PB mode: KRV-45HPS

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.

13-47


CAPSTAN FG AMP
IC505 (1/2) NJM4560D
IC513 (1/2) NJM2903DQ
FG+5V
12V
5V
R568 4.7k
R571 47k
R570 47k
RV503 10k
R569 10k
C521 0.047
R572 220k
505
C520 0.047
R539 47k
C536 0.047
R542 1M
513
R544 10k
C543 :NM
D509 1S2835
R578 10k
RV503:CAPSTAN FG (B)
CAPSTAN FG AMP
IC509 (2/2) NJM4560D
IC505 (2/2) NJM4560D
R535 4.7k
R538 47k
R540 47k
RV500 10k
R536 10k
C526 0.047
R550 100k
509
C527 0.047
R549 47k
R563 1M
R573 6.8k
D508 1S2835
R548 4.7k
RV500:CAPSTAN FG (A)
IN
OUT
IC506 (4/4) MC14070BCP BUFFER
IC506 (3/4) MC14070BCP BUFFER
IC506 (2/4) MC14070BCP BUFFER
506
<*1>
<*2>
R577 1k
R546 47k
R576 1k
IC508 (1/2) MC14013BCP
CAPSTAN FWD DET
508
IC506 (1/4) MC14070BCP
DIR CONT
C525 0.047
CAPSTAN FG (B) 1/5
CAPSTAN FG (B) OUT 111-10 RM. 552-3 (OPTION)
112-1 NC
CAPSTAN FG (A) OUT 112-2 NC
112-3 NC
CN112 :NM
L:CAPSTAN FWD OUT 114-1 RM. 551-11 (OPTION)
L:CAP FWD DET 3/5
L:CAP FWD DET 4/5
IC510 MC14053BCP
ANALOG SWITCH
R575 47k
C528 0.047
TP506 :NM (CAP FWD)
510
X0 X1 AX Y0 Y1 AY Z0 Z1 AZ XC YC ZC VDD EN VEE GND
OPEN
L:CAPSTAN FWD OUT 101-22 DR-176. 631-7
L:CAPSTAN FWD 2/5
CAP ERR (2) 1/5
CAPSTAN FG AMP
IC509 (1/2) NJM4560D
IC513 (2/2) NJM2903DQ
C522 0.047
R551 3.3k
R552 47k
R554 10k
R537 10k
C544 :NM
R541 1M
C546 0.047
R543 4.7k
C545 47p
CAPSTAN STOP SERVO
Q506 2SK523
IC514 (1/2) NJM4560D
IC514 (2/2) NJM4560D
R555 100k
R553 2.2k
R557 10k
R556 10k
R558 10k
514
C547 0.047
R561 22k
RV502 10k
R559 4.7k
R560 22k
R562 47k
C524 100p
R574 4.7k
Q516
Q507
Q510
RV502:CAPSTAN ERROR
Q516 DTC144EK
Q507 DTC144EK
Q510 DTC144EK
STOP SERVO SW
IC503 NJM78L05A
REG FG +5V
C523 47 16V
503
C540 47 16V
FG 5V 1/5
IC508 (2/2) MC14013BCP
C519 0.047
01 TO 10030
DC. 902-11 100-1 REG 7V IN
PS105 1.0A
REG 7V OUT 116-9 CP. 503-5
REG 7V OUT 134-7 VM (1/5). 710-7
REG 7V OUT 134-8 VM (1/5). 710-8
REG 7V OUT 110-6 RM. 552-7 (OPTION)
DC. 902-10 100-2 REG 12V IN
REG 12V OUT 101-24 DR-176. 631-5
REG 12V OUT 130-3 VD (3/3). 201-4
REG 12V OUT 130-4 VD (3/3). 201-3
REG 12V OUT 134-3 VM (5/5). 710-3
REG 12V OUT 134-4 VM (5/5). 710-4
REG 12V OUT 140-5 AU (1/2). 313-3
REG 12V OUT 140-6 AU (1/2). 313-2
PS106 JUMPER
REG 12V OUT 110-4 RM. 552-9 (OPTION)
DC. 902-9 100-3 REG 12V IN
C529 100 16V
C530 0.047
REG 12V 1/5
REG 12V 2/5
REG 12V 3/5
REG 12V 4/5
DC. 902-8 100-4 GND (A)
GND (A) 140-1 AU (1/2). 313-7
GND (A) 140-2 AU (1/2). 313-6
DC. 902-7 100-5 GND (V)
GND (V) 130-5 VD (3/3). 201-2
GND (V) 130-6 VD (3/2). 201-1
GND (V) 134-5 VM (5/5). 710-5
GND (V) 134-6 VM (5/5). 710-6
DC. 902-6 100-6 GND (SS)
GND 111-6 KY. 151-4
GND 116-10 CP. 503-4
GND 134-10 VM (1/5). 710-10
GND 134-12 VM (1/5). 710-12
GND 110-1 RM. 552-10 (OPTION)
GND 110-3 RM. 552-12 (OPTION)
GND 1/5
GND 2/5
GND 3/5
GND 4/5
DC. 902-5 100-7 REG 5.9V IN
REG 5.9V OUT 140-4 AU (1/2). 313-4
REG 5.9V OUT 110-2 RM. 552-11 (OPTION)
C548 120 16V
REG 5.9V 1/5
REG 5.9V 4/5
DC. 902-4 100-8 REG 5.3V IN
REG 5V OUT 130-1 VD (3/3). 201-6
REG 5V OUT 130-2 VD (3/3). 201-5
REG 5V OUT 140-3 AU (1/2). 313-5
REG 5V OUT 117-1 KY. 157-4
REG 5.3V 1/5
REG 5.3V 2/5
DC. 902-3 100-9 GND (M)
GND (M) 101-13 DR-176. 631-16
GND (M) 101-16 DR-176. 631-12
GND (M) 101-17 DR-176. 631-11
GND (M) 111-7 KY. 151-3
GND (M) 110-5 RM. 552-8 (OPTION)
GND (M) 1/5
GND (M) 2/5
DC. 902-2 100-10 REG 12V (M) IN
12V (M) OUT 101-18 DR-176. 631-11
12V (M) OUT 101-19 DR-176. 631-10
12V (M) OUT 101-20 DR-176. 631-9
12V (M) 1/5
12V (M) 2/5
DC. 902-1 100-11 REG -7V IN

IC506 CHANGE INFORMATION
S/N 10001 TO 10030 : SN74HC86ANS <*1>
S/N 10031 AND HIGHER : MC14070BCP <*2>

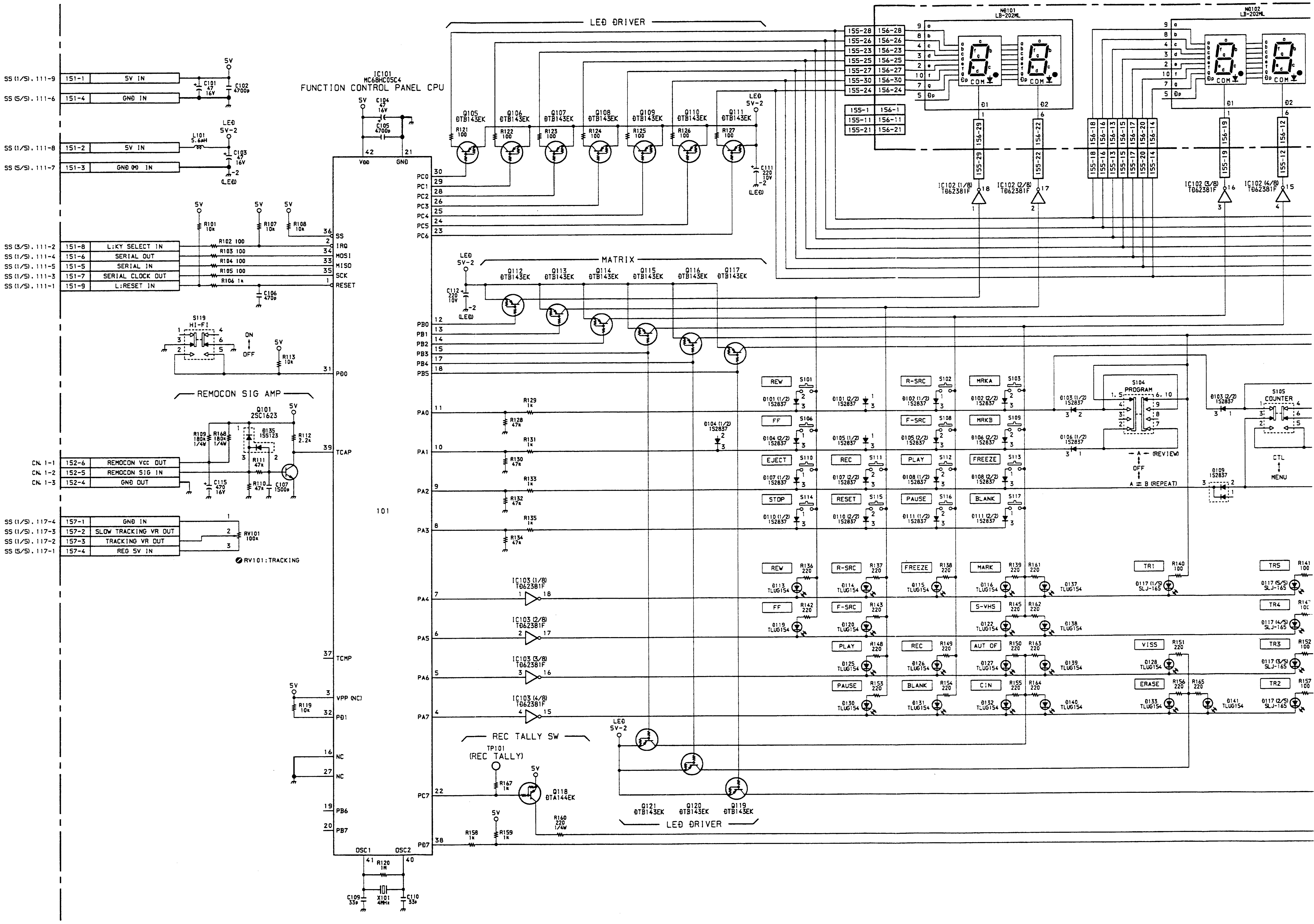
ONLY S/N 10001 TO 10030

- R541 IS MOUNTED AT BETWEEN R543 AND IC513 ON LOCATION K-8 (B-SIDE) OF PC BOARD (1-641-575-12). ("R541": OMITTED REF. NO.)
- R536 IS MOUNTED AT "R537" ON LOCATION J-9 (B-SIDE) OF PC BOARD (1-641-575-12). THIS "R537" ON LOCATION J-9 IS A MISPRINT.

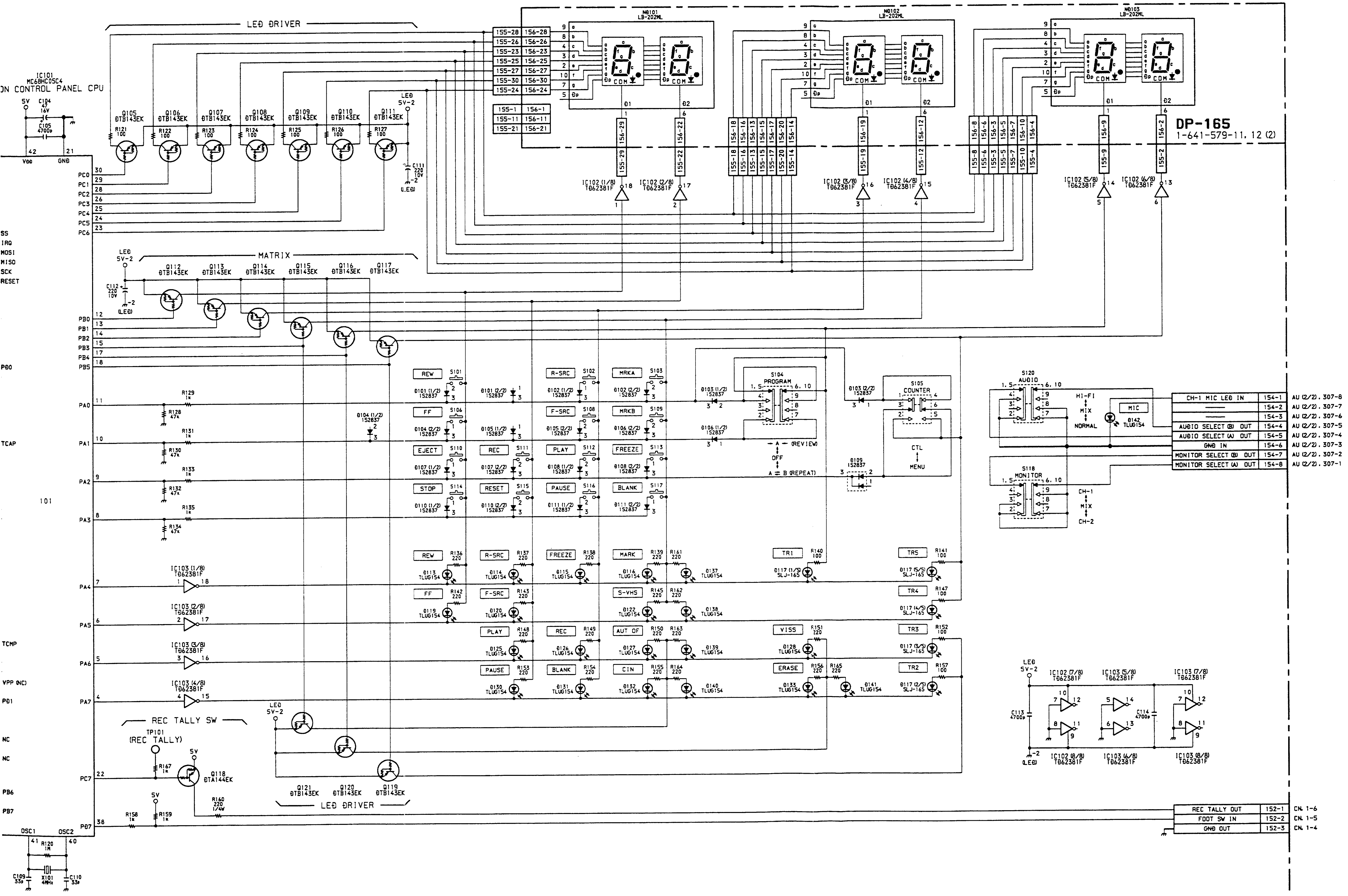
SS-49A (5/5)

1-641-575-12, 14 (1)
SVO-9500MDP

KY-219; FUNCTION KEY/LED/SWITCH
DP-165; COUNTER DISPLAY



LED DRIVER
IC101 MC68HC05C4
FUNCTION CONTROL PANEL CPU
MATRIX
REMOCON SIG AMP
REC TALLY SW
TP101 (REC TALLY)
LED DRIVER
ND101 LB-202ML
ND102 LB-202ML
SS (1/5). 111-9
SS (5/5). 111-6
SS (1/5). 111-8
SS (5/5). 111-7
SS (3/5). 111-2
SS (1/5). 111-4
SS (1/5). 111-5
SS (1/5). 111-3
SS (1/5). 111-1
CN. 1-1
CN. 1-2
CN. 1-3
SS (1/5). 117-4
SS (1/5). 117-3
SS (1/5). 117-2
SS (5/5). 117-1
5V IN
GND IN
5V IN
GND (H) IN
L:KY SELECT IN
SERIAL OUT
SERIAL IN
SERIAL CLOCK OUT
L:RESET IN
REMOCON Vcc OUT
REMOCON SIG IN
GND OUT
GND IN
SLOW TRACKING VR OUT
TRACKING VR OUT
REG 5V IN
RV101 100k
RV101:TRACKING
S119 HI-FI
ON
OFF
Q101 2SC1623
D135 1SS123
Q105 DTB143EK
Q106 DTB143EK
Q107 DTB143EK
Q108 DTB143EK
Q109 DTB143EK
Q110 DTB143EK
Q111 DTB143EK
Q112 DTB143EK
Q113 DTB143EK
Q114 DTB143EK
Q115 DTB143EK
Q116 DTB143EK
Q117 DTB143EK
Q118 DTA144EK
Q119 DTB143EK
Q120 DTB143EK
Q121 DTB143EK
IC102 (1/8) TD62381F
IC102 (2/8) TD62381F
IC102 (3/8) TD62381F
IC102 (4/8) TD62381F
IC103 (1/8) TD62381F
IC103 (2/8) TD62381F
IC103 (3/8) TD62381F
IC103 (4/8) TD62381F
X101 4MHz
VDD
GND
SS
IRQ
MOSI
MISO
SCK
RESET
PD0
TCAP
TCMP
VPP (NC)
PD1
NC
PB6
PB7
OSC1
OSC2
PC0
PC1
PC2
PC3
PC4
PC5
PC6
PC7
PB0
PB1
PB2
PB3
PB4
PB5
PA0
PA1
PA2
PA3
PA4
PA5
PA6
PA7
101
REW
FF
EJECT
STOP
REC
RESET
R-SRC
F-SRC
PLAY
PAUSE
MRKA
MRKB
FREEZE
BLANK
S101
S102
S103
S104 PROGRAM
S105 COUNTER
S106
S107
S108
S109
S110
S111
S112
S113
S114
S115
S116
S117
A (REVIEW)
OFF
A = B (REPEAT)
CTL
MENU
REW
FF
R-SRC
F-SRC
PLAY
PAUSE
FREEZE
REC
BLANK
MARK
S-VHS
AUT OF
CIN
TR1
VISS
ERASE
TR5
TR4
TR3
TR2
D113 TLUG154
D119 TLUG154
D114 TLUG154
D120 TLUG154
D125 TLUG154
D130 TLUG154
D115 TLUG154
D126 TLUG154
D131 TLUG154
D116 TLUG154
D122 TLUG154
D127 TLUG154
D132 TLUG154
D137 TLUG154
D138 TLUG154
D139 TLUG154
D140 TLUG154
D117 (1/5) SLJ-165
D128 TLUG154
D133 TLUG154
D141 TLUG154
D117 (5/5) SLJ-165
D117 (4/5) SLJ-165
D117 (3/5) SLJ-165
D117 (2/5) SLJ-165
D109 1S2837


LED DRIVER
IC101
MC68HC05C4
N CONTROL PANEL CPU
ND101 LB-202ML
ND102 LB-202ML
ND103 LB-202ML
DP-165
1-641-579-11, 12 (2)
IC102 (1/8) TD62381F
IC102 (2/8) TD62381F
IC102 (3/8) TD62381F
IC102 (4/8) TD62381F
IC102 (5/8) TD62381F
IC102 (6/8) TD62381F
Q105 DTB143EK
Q106 DTB143EK
Q107 DTB143EK
Q108 DTB143EK
Q109 DTB143EK
Q110 DTB143EK
Q111 DTB143EK
MATRIX
Q112 DTB143EK
Q113 DTB143EK
Q114 DTB143EK
Q115 DTB143EK
Q116 DTB143EK
Q117 DTB143EK
REW
FF
EJECT
STOP
R-SRC
F-SRC
REC
RESET
PLAY
PAUSE
MRKA
MRKB
FREEZE
BLANK
S104 PROGRAM
A (REVIEW)
OFF
A ⇄ B (REPEAT)
S105 COUNTER
CTL
MENU
S120 AUDIO
HI-FI
MIX
NORMAL
MIC
S118 MONITOR
CH-1
MIX
CH-2
CH-1 MIC LED IN
AUDIO SELECT (B) OUT
AUDIO SELECT (A) OUT
GND IN
MONITOR SELECT (B) OUT
MONITOR SELECT (A) OUT
R-SRC
FREEZE
MARK
TR1
TR5
F-SRC
S-VHS
TR4
PLAY
REC
AUT OF
VISS
TR3
PAUSE
BLANK
CIN
ERASE
TR2
IC103 (1/8) TD62381F
IC103 (2/8) TD62381F
IC103 (3/8) TD62381F
IC103 (4/8) TD62381F
REC TALLY SW
TP101 (REC TALLY)
Q118 DTA144EK
Q121 DTB143EK
Q120 DTB143EK
Q119 DTB143EK
LED DRIVER
REC TALLY OUT
FOOT SW IN
GND OUT
CN 1-6
CN 1-5
CN 1-4
X101 4MHz

KY-219

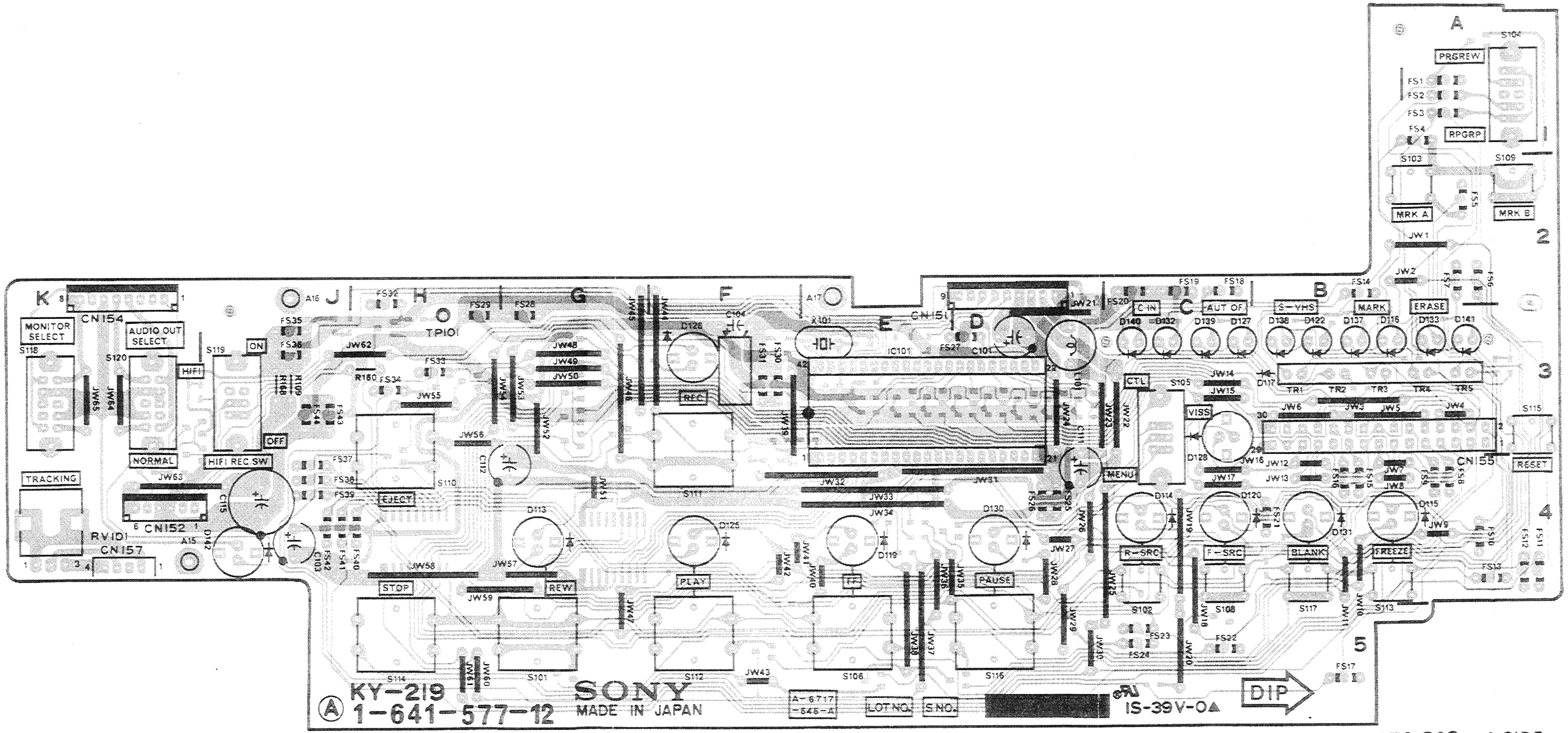
1-641-577-11, 12 (2)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

KY-219 ; FUNCTION KEY/LED/SWITCH
DP-165 ; COUNTER DISPLAY

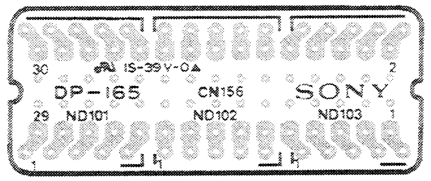
KY-219 (1-641-577-11, 12)

CN151	E-3
CN152	K-4
CN154	K-2
CN155	A-4
CN157	K-4
D101	G-5 *
D102	C-5 *
D103	D-5 *
D104	E-5 *
D105	C-5 *
D106	A-1 *
D107	H-4 *
D108	F-5 *
D109	D-4 *
D110	E-5 *
D111	D-5 *
D113	G-4
D114	C-4
D115	A-4
D116	B-3
D117	B-3
D119	E-4
D120	C-4
D122	B-3
D125	F-4
D126	F-3
D127	C-3
D128	C-3
D130	D-4
D131	B-4
D132	C-3
D133	A-3
D135	K-3 *
D137	B-3
D138	B-3
D139	C-3
D140	C-3
D141	A-3
D142	J-4
IC101	E-3
IC102	H-4 *
IC103	G-4 *
Q101	K-4 *
Q105	E-3 *
Q106	E-3 *
Q107	D-3 *
Q108	D-3 *
Q109	D-3 *
Q110	D-3 *
Q111	D-3 *
Q112	G-3 *
Q113	G-3 *
Q114	G-3 *
Q115	G-3 *
Q116	G-3 *
Q117	G-3 *
Q118	H-3 *
Q119	H-3 *
Q120	H-3 *
Q121	H-3 *
RV101	K-4
S101	G-5
S102	C-5
S103	A-2
S104	A-1
S105	C-3
S106	E-5
S108	C-5
S109	A-2
S110	H-4
S111	F-4
S112	F-5
S113	B-5
S114	H-5
S115	A-3
S116	D-5
S117	B-5
S118	K-3
S119	J-3
S120	K-3
TP101	H-3
X101	E-3

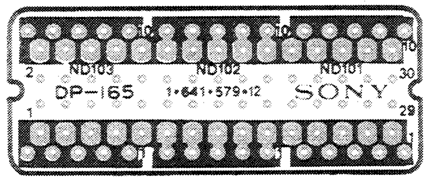
* mark ; B SIDE mount


A
B
C
D
E
F
G
H
J
K
2
3
4
5
PRGREW
RPGRP
MRK A
MRK B
S-VHS
MARK
ERASE
C-IN
AUT OF
CTL
VISS
MENU
RESET
R-SRC
F-SRC
BLANK
FREEZE
STOP
REW
PLAY
FF
PAUSE
REC
EJECT
MONITOR SELECT
AUDIO OUT SELECT
HIFI
ON
OFF
NORMAL
HIFI REC SW
TRACKING
TP101
CN151
CN152
CN154
CN155
CN157
RV101
IC101
X101
KY-219
1-641-577-12
SONY
MADE IN JAPAN
LOT NO.
S NO.
IS-39V-0
DIP

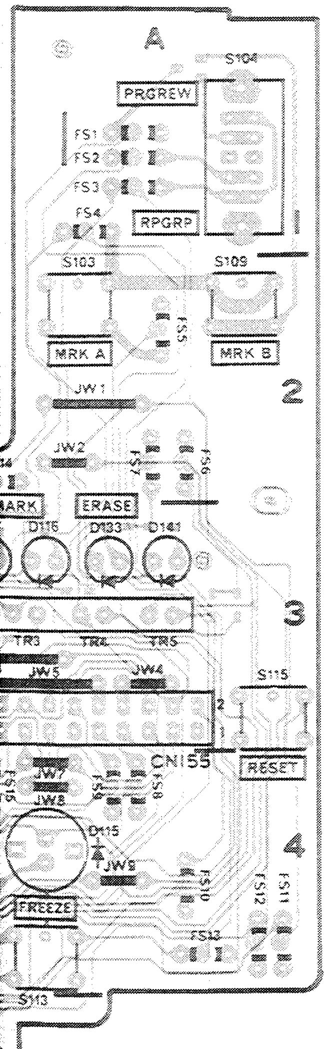
KY-219 — A SIDE —
1-641-577-11, 12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

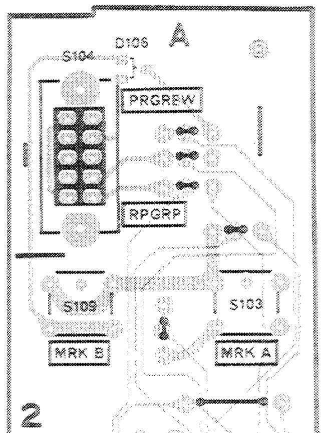
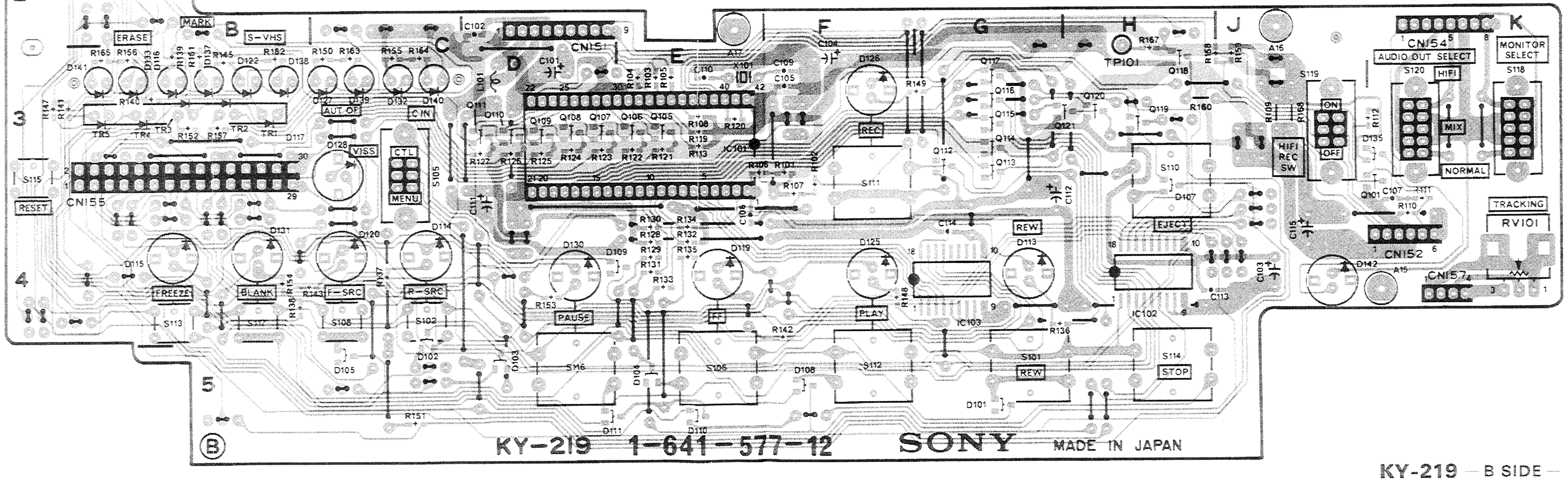

30
IS-39Y-0
2
DP-165
CN156
SONY
29
ND101
ND102
ND103
1

DP-165 — A SIDE —
1-641-579-11, 12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


ND103
ND102
ND101
DP-165
1-641-579-12
SONY
2
30
1
29

DP-165 — B SIDE —
1-641-579-11, 12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


A
S104
PRGREW
FS1
FS2
FS3
FS4
RPGRP
S103
S109
MRK A
MRK B
2
JW1
JW2
ERASE
3
TR3
TR4
TR5
JW5
JW4
CN155
S115
RESET
4
D115
JW6
FREEZE
S113



A
S104
D106
PRGREW
RPGRP
S109
S103
MRK B
MRK A
2
3
4
5
ERASE
MARK
B
S-VHS
C
D
E
F
G
H
J
K
C102
CN151
TP101
AUT OFF
C IN
VISS
CTL
MENU
S105
S115
RESET
CN155
IC101
X101
REC
S111
Q117
Q118
R167
A16
S119
ON
OFF
HIFI REC SW
CN154
AUDIO OUT SELECT
S120
HIFI
MIX
NORMAL
MONITOR SELECT
S118
S110
D107
EJECT
REW
TRACKING
RV101
CN152
CN157
A15
D142
FREEZE
BLANK
F-SRC
R-SRC
S113
S112
S108
S102
PAUSE
S116
FF
S106
PLAY
S112
IC103
IC102
S101
REW
S114
STOP
D101
D108
D110
D111
R151
KY-219 1-641-577-12
SONY
MADE IN JAPAN
B

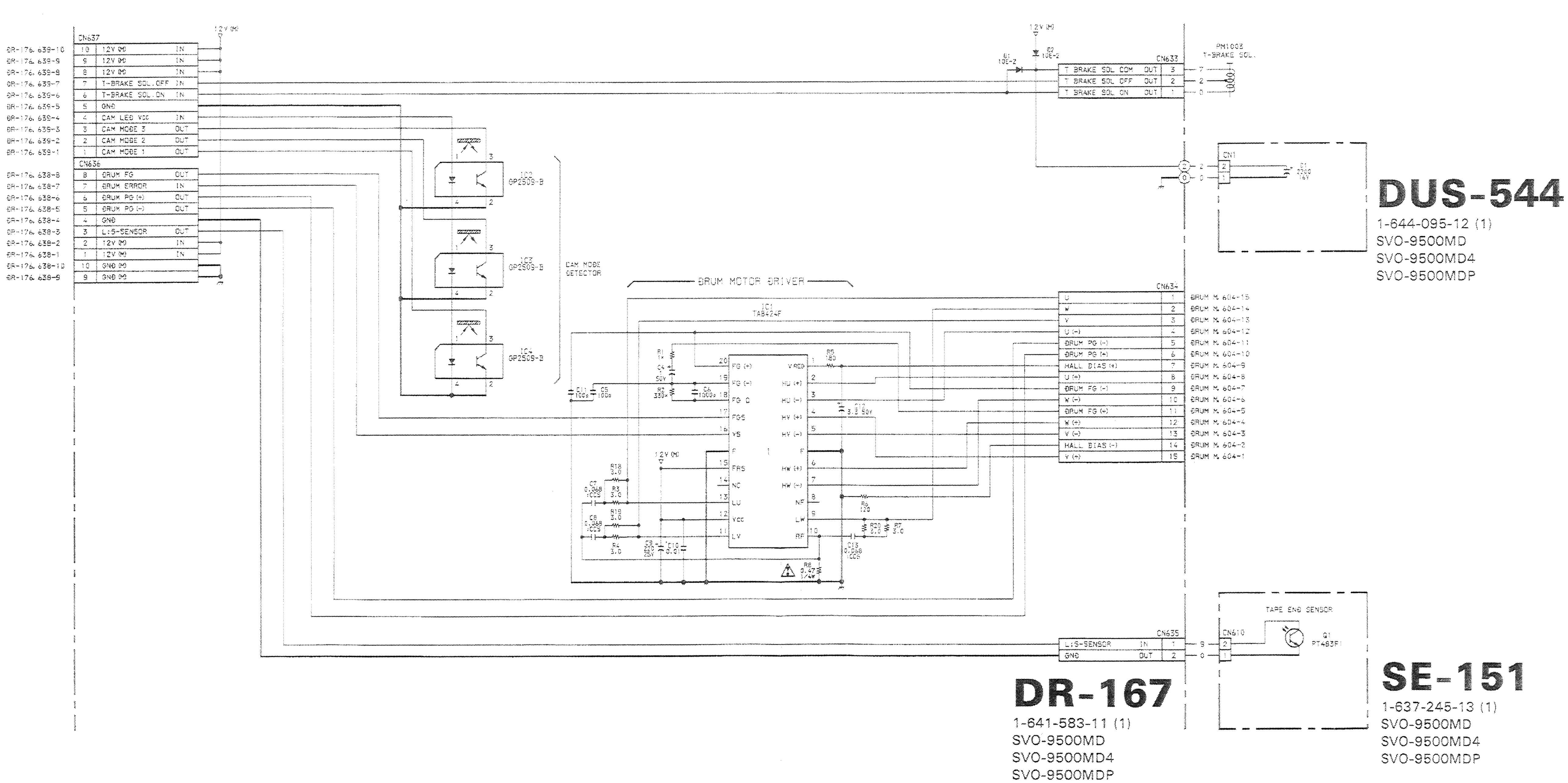
KY-219 — A SIDE —
1-641-577-11, 12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

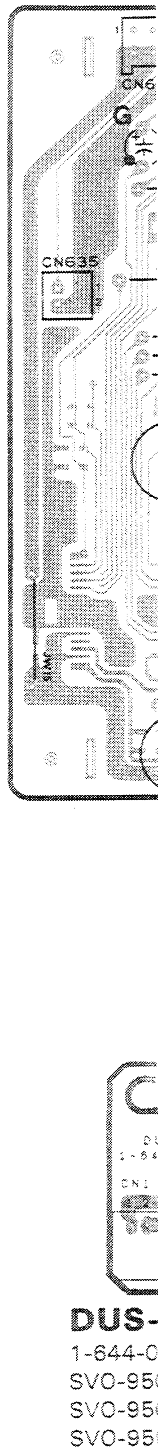
KY-219 — B SIDE —
1-641-577-11, 12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

DR-167 ; DRUM MOTOR DRIVER
CAM MODE DETECTOR

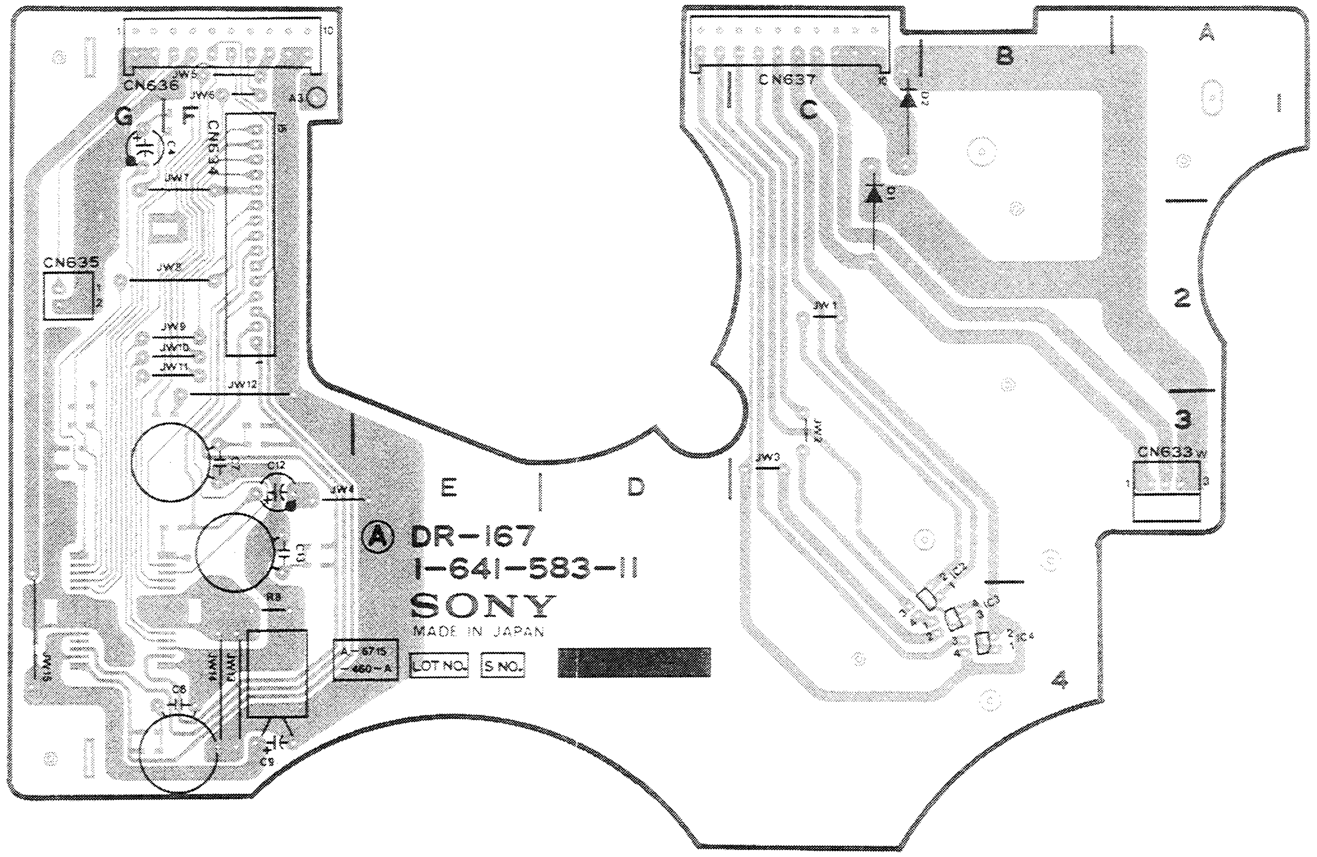
DUS-544 ; CAPACITOR for
T-BRAKE SOLENOID

SE-151 ; TAPE END SENSOR

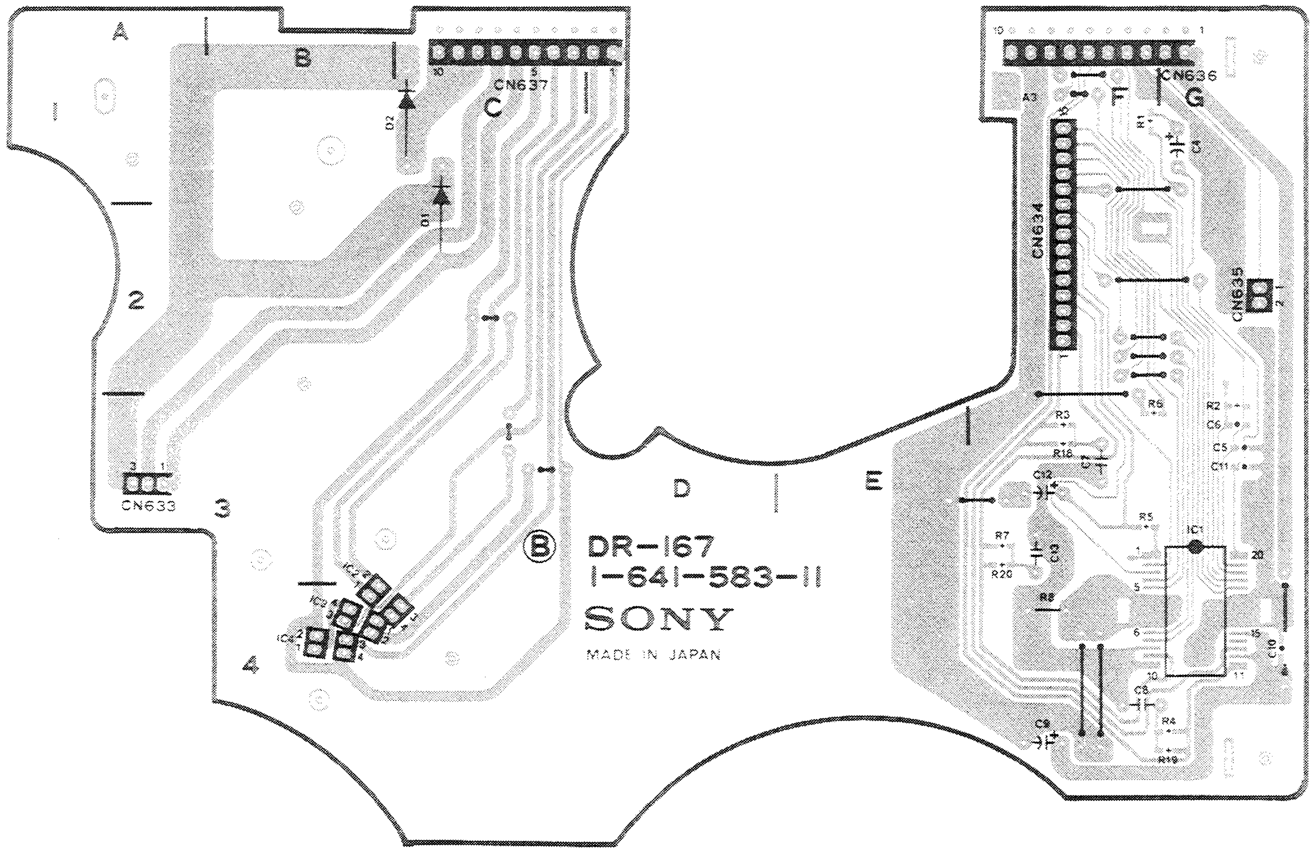

CN637
CN636
CN633
CN634
CN635
CN610
CN1
12V (M)
T-BRAKE SOL. OFF
T-BRAKE SOL. ON
CAM LED VCC
CAM MODE 3
CAM MODE 2
CAM MODE 1
DRUM FG
DRUM ERROR
DRUM PG (+)
DRUM PG (-)
L.I.S-SENSOR
GND
IC3 GP2S09-B
IC2 GP2S09-B
IC4 GP2S09-B
CAM MODE DETECTOR
DRUM MOTOR DRIVER
IC1 TA8424F
PM1002 T-BRAKE SOL.
TAPE END SENSOR
Q1 PT483F1
DUS-544
1-644-095-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP
DR-167
1-641-583-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP
SE-151
1-637-245-13 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP



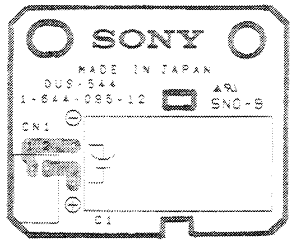
NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.


CN636
CN637
CN634
CN635
CN633
A
B
C
D
E
F
G
2
3
4
Ⓐ DR-167
1-641-583-11
SONY
MADE IN JAPAN
LOT NO.
S NO.

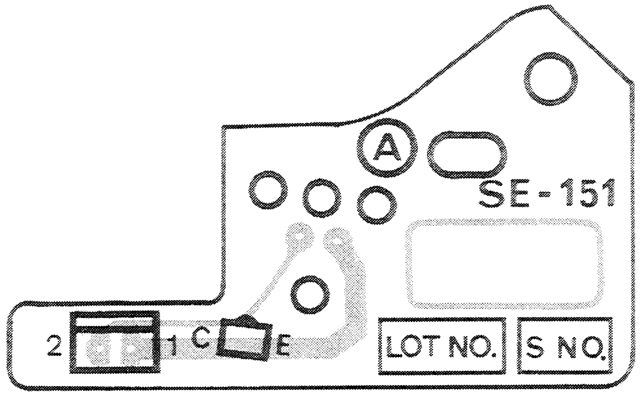
DR-167 — A SIDE —
1-641-583-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


CN636
CN637
CN634
CN635
CN633
IC1
A
B
C
D
E
F
G
2
3
4
Ⓑ DR-167
1-641-583-11
SONY
MADE IN JAPAN

DR-167 — B SIDE —
1-641-583-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

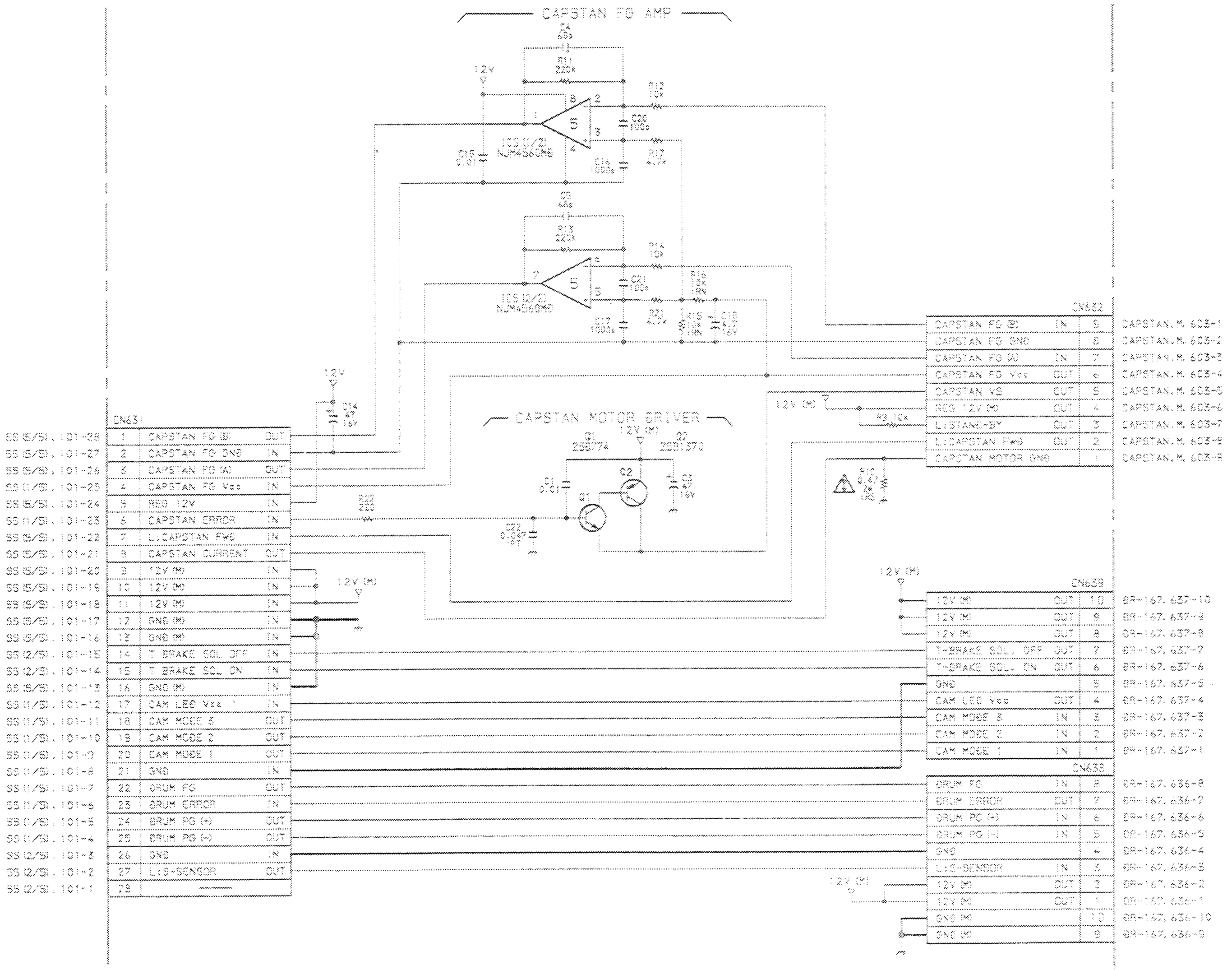

SONY
MADE IN JAPAN
DUS-544
1-644-095-12
CN1
C1

DUS-544 — A SIDE —
1-644-095-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

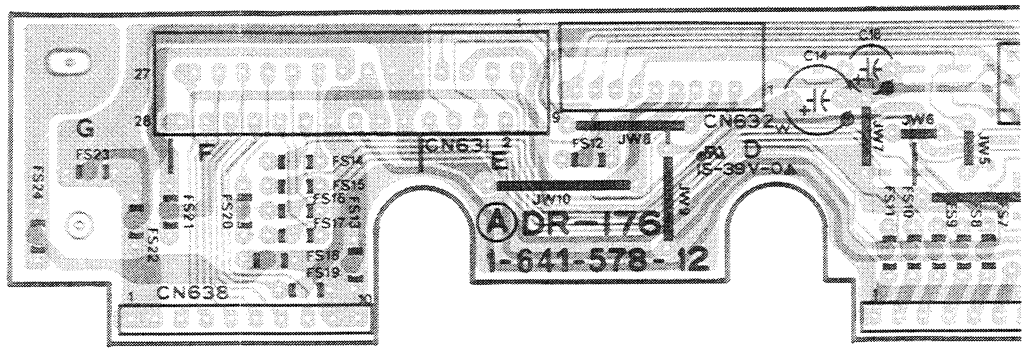

Ⓐ
SE-151
2
1
C
E
LOT NO.
S NO.

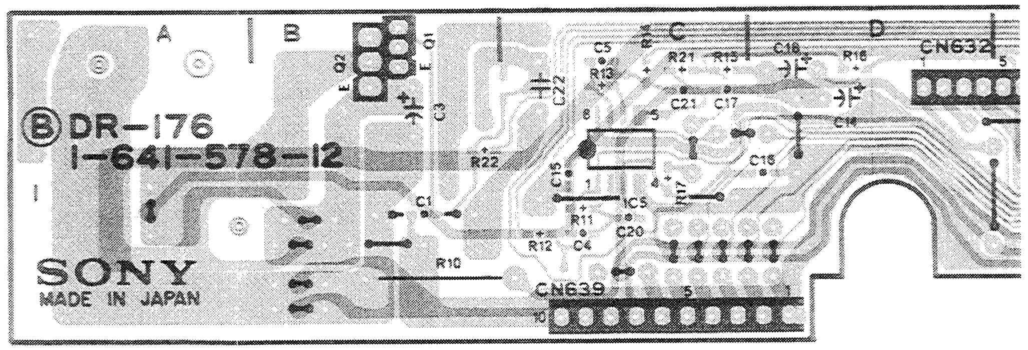
SE-151 — A SIDE —
1-637-245-13 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

DR-176 ; CAPSTAN MOTOR DRIVER
CAPSTAN FG AMP


CAPSTAN FG AMP
IC5 (1/2) NJM4560MB
IC5 (2/2) NJM4560MB
CAPSTAN MOTOR DRIVER
CN631
CN632
CN639
CN638
12V
12V (M)

DR-176
1-641-578-12 (1)
SVO-9500MDP


Ⓐ DR-176
1-641-578-12
CN631
CN632
CN638
G
F
E
D


Ⓑ DR-176
1-641-578-12
SONY
MADE IN JAPAN
CN632
CN639
A
B
C
D

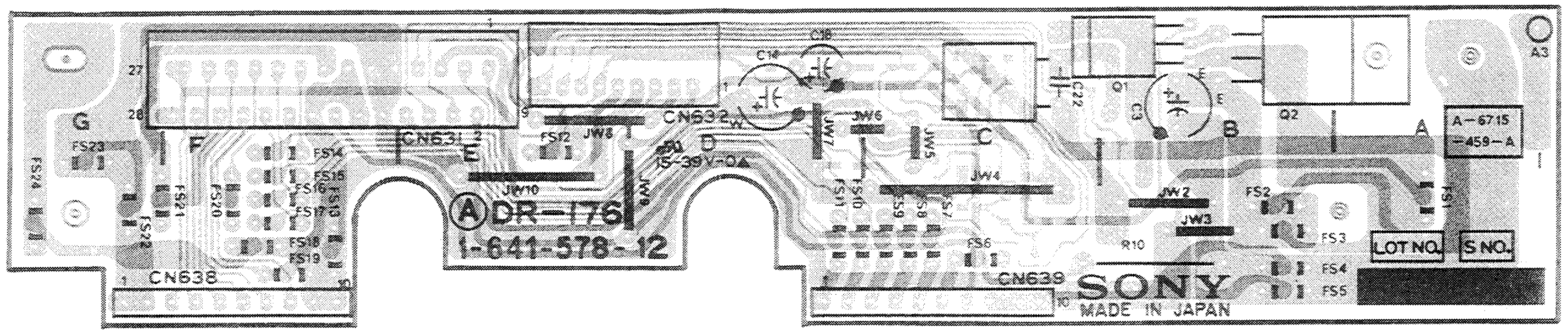
NOTE :
The ⚠-marked components are critical to safety.
Replace only with same components as specified.

		CN632
IN	9	CAPSTAN.M. 603-1
	8	CAPSTAN.M. 603-2
IN	7	CAPSTAN.M. 603-3
OUT	6	CAPSTAN.M. 603-4
OUT	5	CAPSTAN.M. 603-5
OUT	4	CAPSTAN.M. 603-6
OUT	3	CAPSTAN.M. 603-7
OUT	2	CAPSTAN.M. 603-8
GND	1	CAPSTAN.M. 603-9

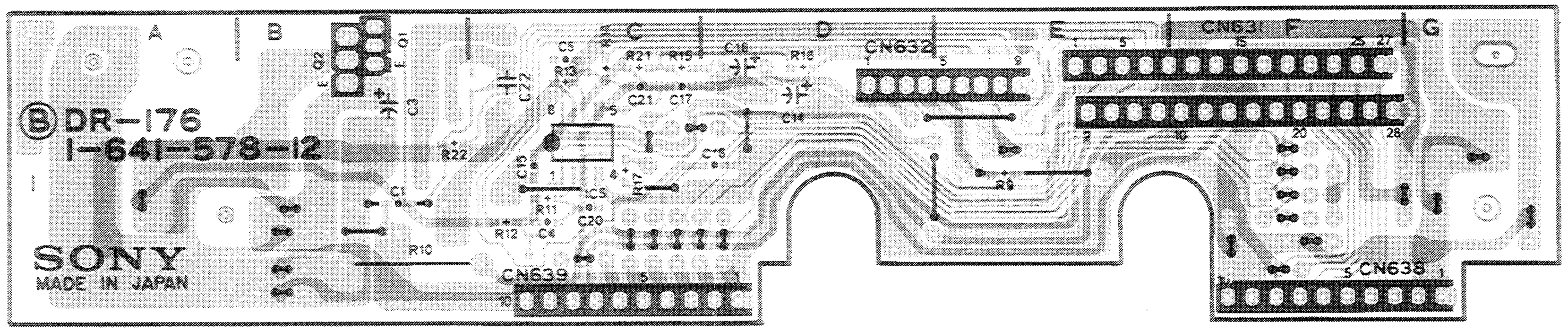
		CN639
OUT	10	DR-167. 637-10
OUT	9	DR-167. 637-9
OUT	8	DR-167. 637-8
OFF OUT	7	DR-167. 637-7
ON OUT	6	DR-167. 637-6
	5	DR-167. 637-5
OUT	4	DR-167. 637-4
IN	3	DR-167. 637-3
IN	2	DR-167. 637-2
IN	1	DR-167. 637-1

		CN638
IN	8	DR-167. 636-8
OUT	7	DR-167. 636-7
IN	6	DR-167. 636-6
IN	5	DR-167. 636-5
	4	DR-167. 636-4
IN	3	DR-167. 636-3
OUT	2	DR-167. 636-2
OUT	1	DR-167. 636-1
	10	DR-167. 636-10
	9	DR-167. 636-9

76

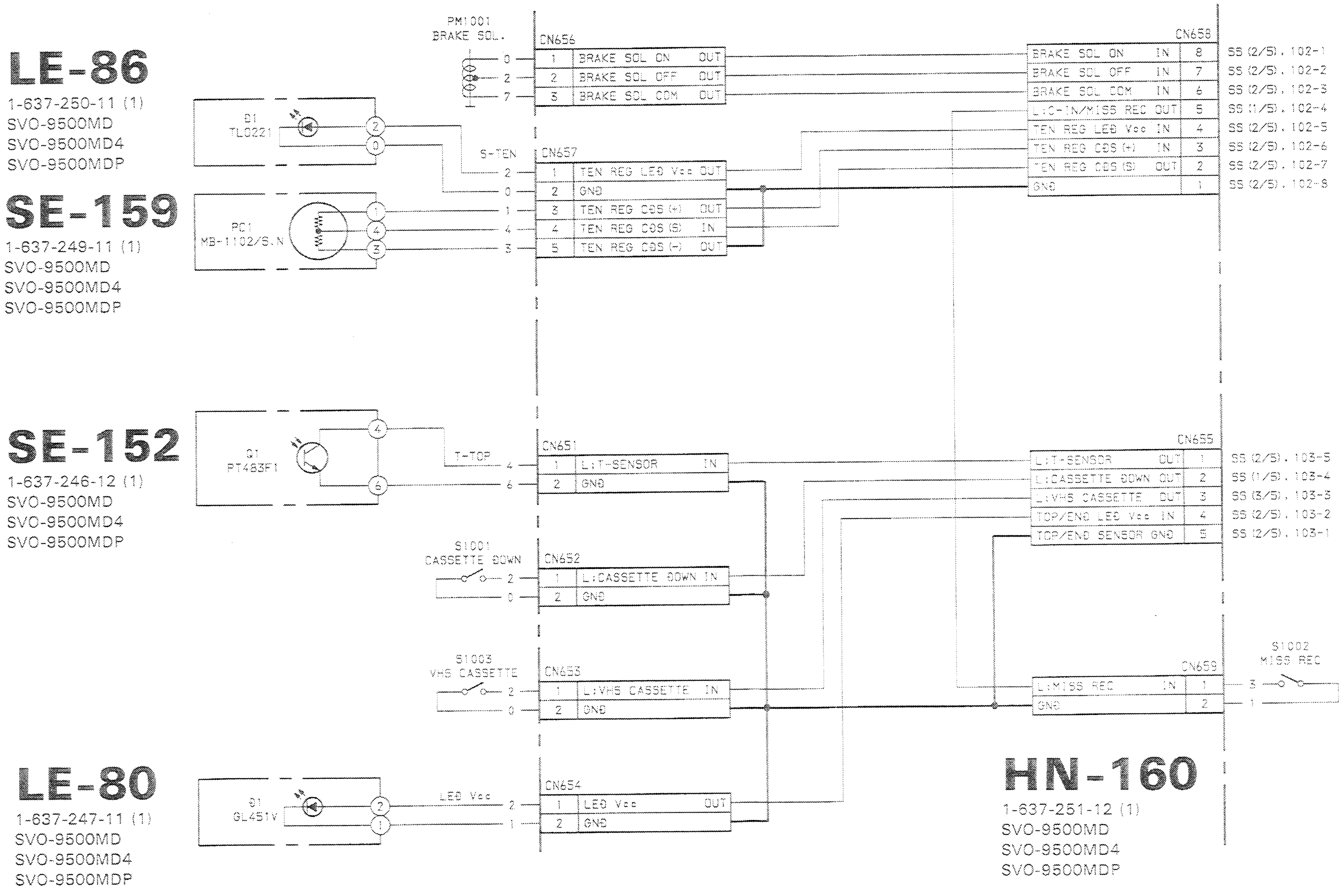

Ⓐ DR-176
1-641-578-12
CN631
CN632
CN638
CN639
A
B
C
D
E
F
G
Q1
Q2
C3
C14
C16
C22
R10
JW2
JW3
JW4
JW5
JW6
JW7
JW8
JW9
JW10
FS1
FS2
FS3
FS4
FS5
FS6
FS7
FS8
FS9
FS10
FS11
FS12
FS14
FS15
FS16
FS17
FS18
FS19
FS20
FS21
FS22
FS23
FS24
A3
A-6715
-459-A
LOT NO.
S NO.
SONY
MADE IN JAPAN

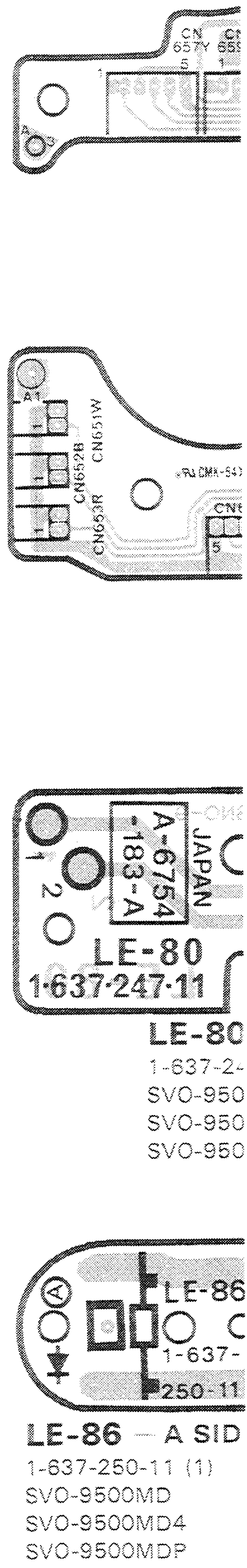
DR-176 — A SIDE —
1-641-578-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


Ⓑ DR-176
1-641-578-12
A
B
C
D
E
F
G
Q1
Q2
CN631
CN632
CN638
CN639
IC5
C1
C3
C4
C5
C14
C15
C16
C17
C18
C20
C21
C22
R9
R10
R11
R12
R13
R14
R15
R16
R17
R21
R22
SONY
MADE IN JAPAN

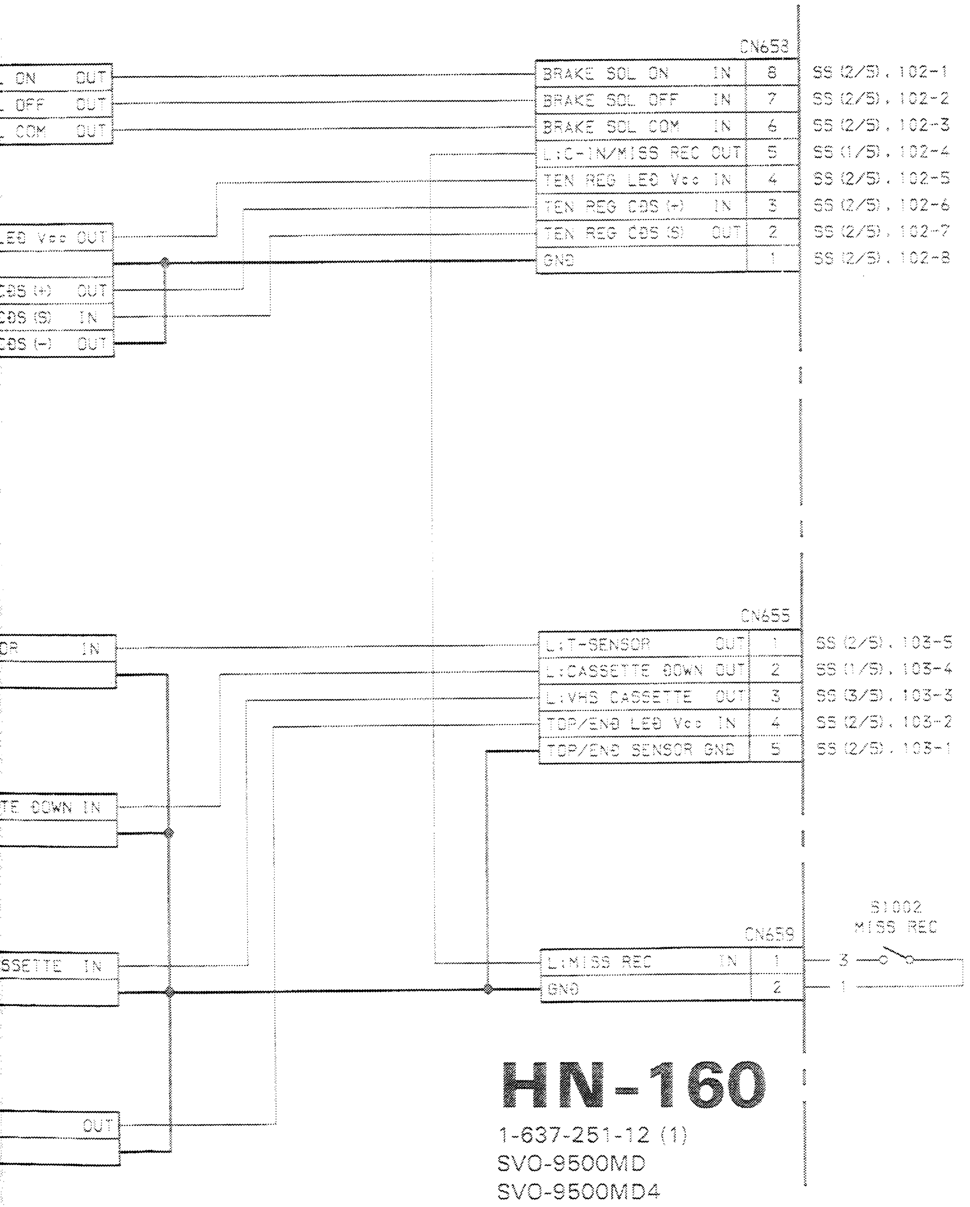
DR-176 — B SIDE —
1-641-578-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

HN-160 ; CONNECTION BOARD
LE-80 ; TAPE TOP/END LED
LE-86 ; TENSION REGULATOR LED
SE-152 ; TAPE TOP SENSOR
SE-159 ; TENSION REGULATOR

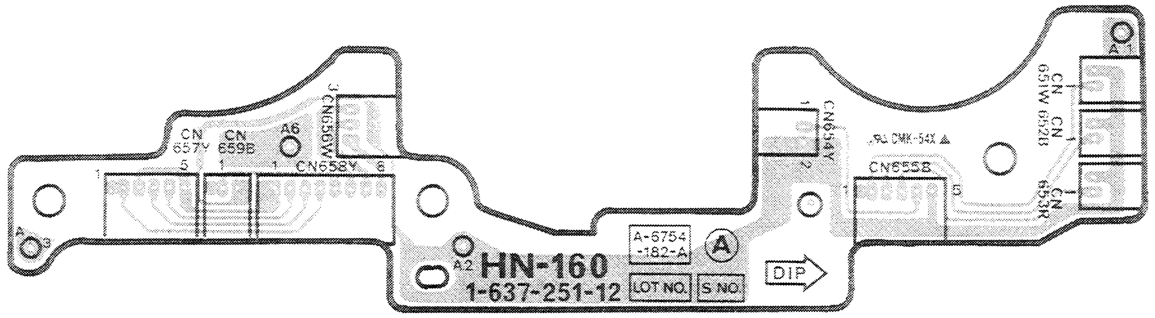

LE-86
1-637-250-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP
D1 TL0221
SE-159
1-637-249-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP
PC1 MB-1102/S.N
SE-152
1-637-246-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP
Q1 PT483F1
LE-80
1-637-247-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP
D1 GL451V
PM1001 BRAKE SOL.
S-TEN
T-TOP
S1001 CASSETTE DOWN
S1003 VHS CASSETTE
LED Vcc
CN656
1 BRAKE SOL ON OUT
2 BRAKE SOL OFF OUT
3 BRAKE SOL COM OUT
CN657
1 TEN REG LED Vcc OUT
2 GND
3 TEN REG CDS (+) OUT
4 TEN REG CDS (S) IN
5 TEN REG CDS (-) OUT
CN651
1 L:T-SENSOR IN
2 GND
CN652
1 L:CASSETTE DOWN IN
2 GND
CN653
1 L:VHS CASSETTE IN
2 GND
CN654
1 LED Vcc OUT
2 GND
CN658
BRAKE SOL ON IN 8 SS (2/5), 102-1
BRAKE SOL OFF IN 7 SS (2/5), 102-2
BRAKE SOL COM IN 6 SS (2/5), 102-3
L:C-IN/MISS REC OUT 5 SS (1/5), 102-4
TEN REG LED Vcc IN 4 SS (2/5), 102-5
TEN REG CDS (+) IN 3 SS (2/5), 102-6
TEN REG CDS (S) OUT 2 SS (2/5), 102-7
GND 1 SS (2/5), 102-8
CN655
L:T-SENSOR OUT 1 SS (2/5), 103-5
L:CASSETTE DOWN OUT 2 SS (1/5), 103-4
L:VHS CASSETTE OUT 3 SS (3/5), 103-3
TOP/END LED Vcc IN 4 SS (2/5), 103-2
TOP/END SENSOR GND 5 SS (2/5), 103-1
CN659
L:MISS REC IN 1
GND 2
S1002 MISS REC
HN-160
1-637-251-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


CN 657Y
A1
CN652B
CN651W
CN653R
A-6754-183-A
JAPAN
LE-80
1-637-247-11
LE-80
1-637-2
SVO-950
SVO-950
SVO-950
LE-86
1-637-
250-11
LE-86 — A SID
1-637-250-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

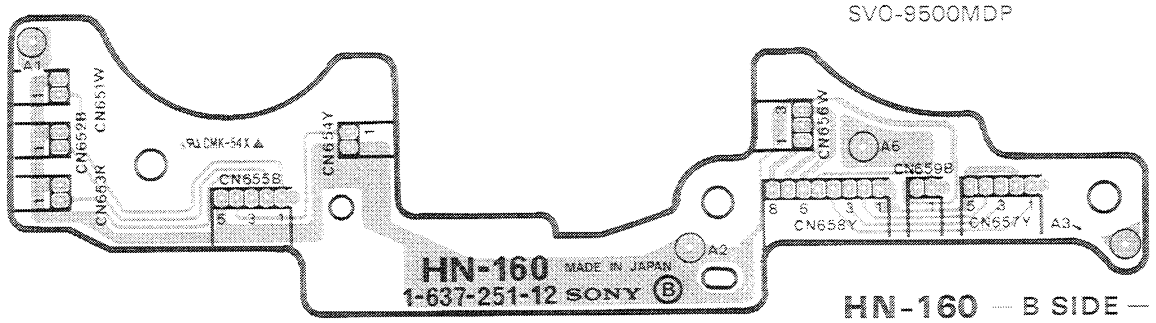
HN-160, LE-80, LE-86, SE-152, SE-159


CN653
BRAKE SOL ON IN 8 SS (2/5), 102-1
BRAKE SOL OFF IN 7 SS (2/5), 102-2
BRAKE SOL COM IN 6 SS (2/5), 102-3
L:C-IN/MISS REC OUT 5 SS (1/5), 102-4
TEN REG LED Vcc IN 4 SS (2/5), 102-5
TEN REG CDS (+) IN 3 SS (2/5), 102-6
TEN REG CDS (S) OUT 2 SS (2/5), 102-7
GND 1 SS (2/5), 102-8
CN655
L:T-SENSOR OUT 1 SS (2/5), 103-5
L:CASSETTE DOWN OUT 2 SS (1/5), 103-4
L:VHS CASSETTE OUT 3 SS (3/5), 103-3
TOP/END LED Vcc IN 4 SS (2/5), 103-2
TOP/END SENSOR GND 5 SS (2/5), 103-1
CN659
L:MISS REC IN 1
GND 2
S1002
MISS REC
3
1

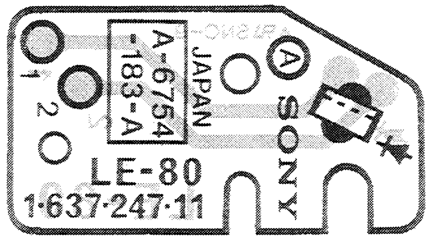
HN-160
1-637-251-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


HN-160
1-637-251-12
A-6754-182-A
LOT NO.
S NO.
DIP
CN657Y
CN659B
CN656W
CN658Y
A6
A2
A3
CN654Y
CN655B
CN651W
CN652B
CN653R
A1

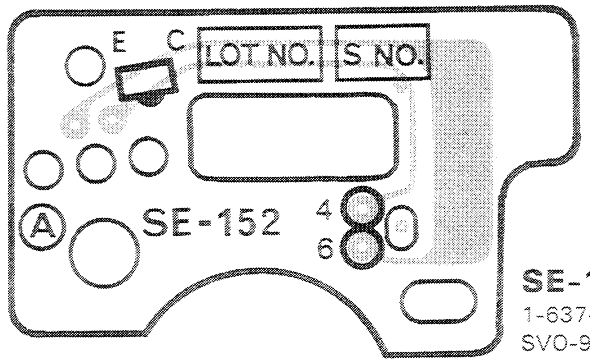
HN-160 — A SIDE —
1-637-251-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


HN-160
MADE IN JAPAN
1-637-251-12 SONY
A1
CN652B
CN651W
CN653R
CN655B
CN654Y
CN656W
A6
CN659B
CN658Y
CN657Y
A2
A3

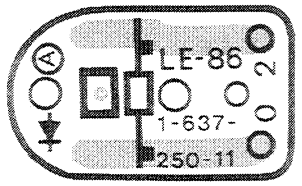
HN-160 — B SIDE —
1-637-251-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


A-6754-183-A
JAPAN
SONY
LE-80
1·637·247·11
1
2

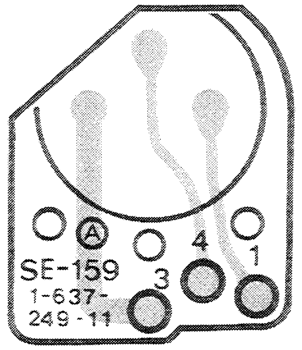
LE-80 — A SIDE —
1-637-247-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


E
C
LOT NO.
S NO.
SE-152
4
6

SE-152 — A SIDE —
1-637-246-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


LE-86
1-637-
250-11
2
0

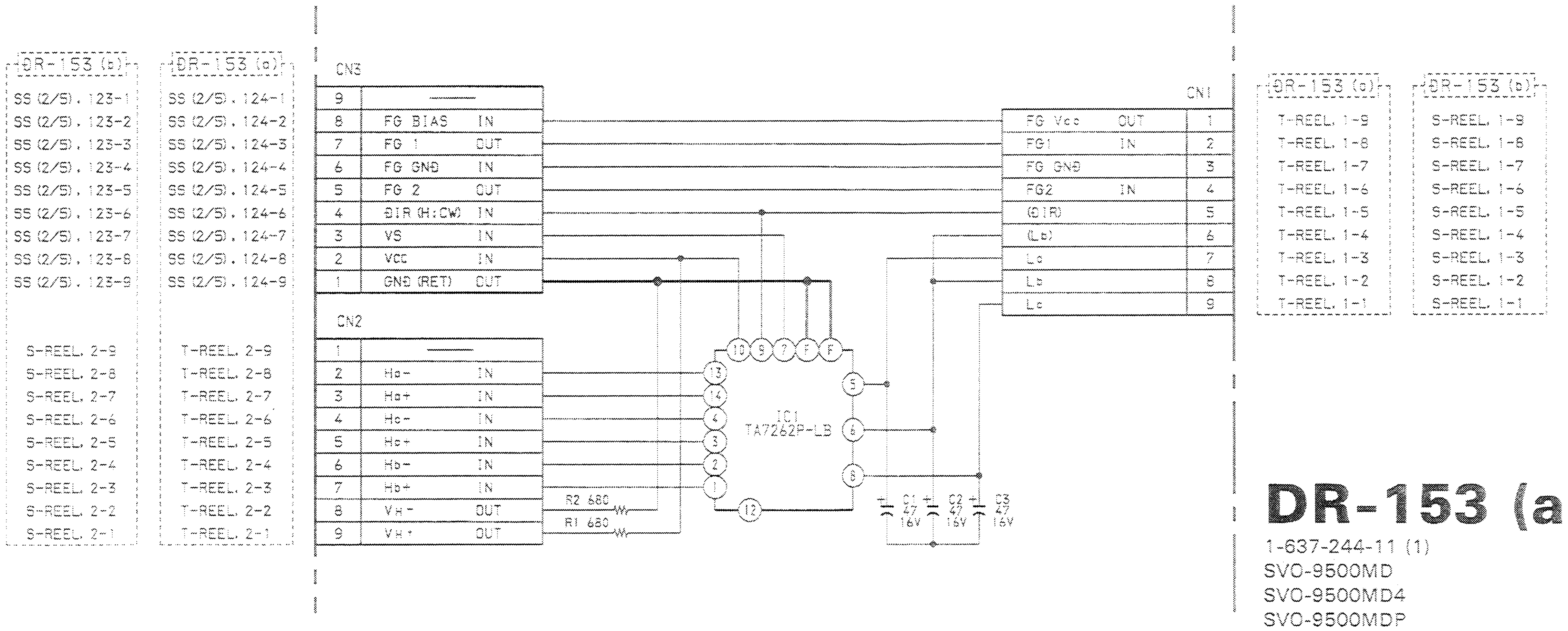
LE-86 — A SIDE —
1-637-250-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


SE-159
1-637-
249-11
3
4
1

SE-159 — A SIDE —
1-637-249-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

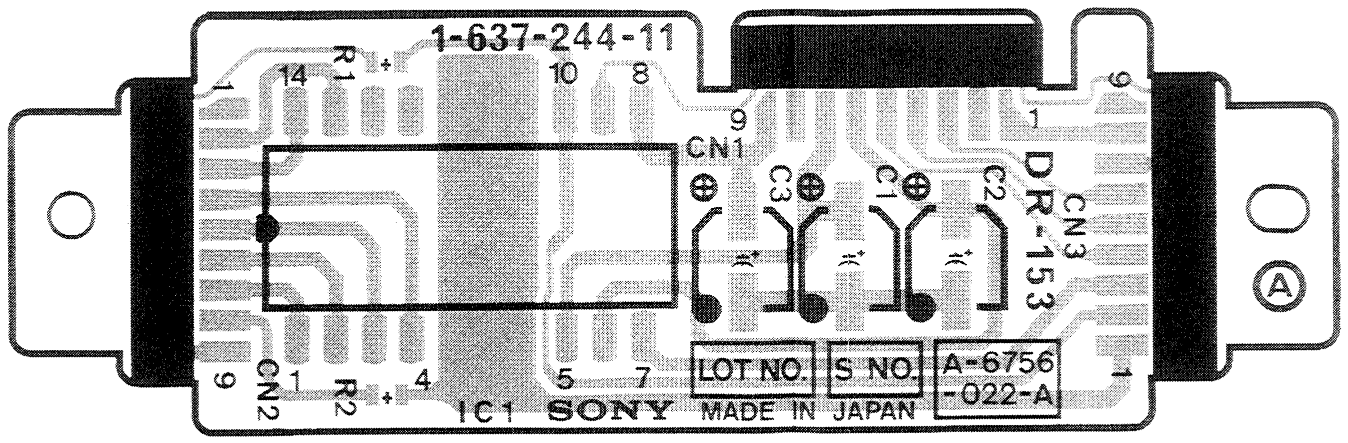
13-52

DR-153 (a) ; T REEL DRIVER
DR-153 (b) ; S REEL DRIVER


DR-153 (b)
SS (2/5) . 123-1
SS (2/5) . 123-2
SS (2/5) . 123-3
SS (2/5) . 123-4
SS (2/5) . 123-5
SS (2/5) . 123-6
SS (2/5) . 123-7
SS (2/5) . 123-8
SS (2/5) . 123-9
S-REEL. 2-9
S-REEL. 2-8
S-REEL. 2-7
S-REEL. 2-6
S-REEL. 2-5
S-REEL. 2-4
S-REEL. 2-3
S-REEL. 2-2
S-REEL. 2-1
DR-153 (a)
SS (2/5) . 124-1
SS (2/5) . 124-2
SS (2/5) . 124-3
SS (2/5) . 124-4
SS (2/5) . 124-5
SS (2/5) . 124-6
SS (2/5) . 124-7
SS (2/5) . 124-8
SS (2/5) . 124-9
T-REEL. 2-9
T-REEL. 2-8
T-REEL. 2-7
T-REEL. 2-6
T-REEL. 2-5
T-REEL. 2-4
T-REEL. 2-3
T-REEL. 2-2
T-REEL. 2-1
CN3
9
8 FG BIAS IN
7 FG 1 OUT
6 FG GND IN
5 FG 2 OUT
4 DIR (H:CW) IN
3 VS IN
2 VCC IN
1 GND (RET) OUT
CN2
1
2 Ha- IN
3 Ha+ IN
4 Hc- IN
5 Hc+ IN
6 Hb- IN
7 Hb+ IN
8 VH- OUT
9 VH+ OUT
R2 680
R1 680
IC1
TA7262P-LB
10 9 7 F F
13 14 4 3 2 1 12
5 6 8
C1 47 16V
C2 47 16V
C3 47 16V
CN1
FG Vcc OUT 1
FG1 IN 2
FG GND 3
FG2 IN 4
(DIR) 5
(Lb) 6
La 7
Lb 8
Lc 9
DR-153 (a)
T-REEL. 1-9
T-REEL. 1-8
T-REEL. 1-7
T-REEL. 1-6
T-REEL. 1-5
T-REEL. 1-4
T-REEL. 1-3
T-REEL. 1-2
T-REEL. 1-1
DR-153 (b)
S-REEL. 1-9
S-REEL. 1-8
S-REEL. 1-7
S-REEL. 1-6
S-REEL. 1-5
S-REEL. 1-4
S-REEL. 1-3
S-REEL. 1-2
S-REEL. 1-1

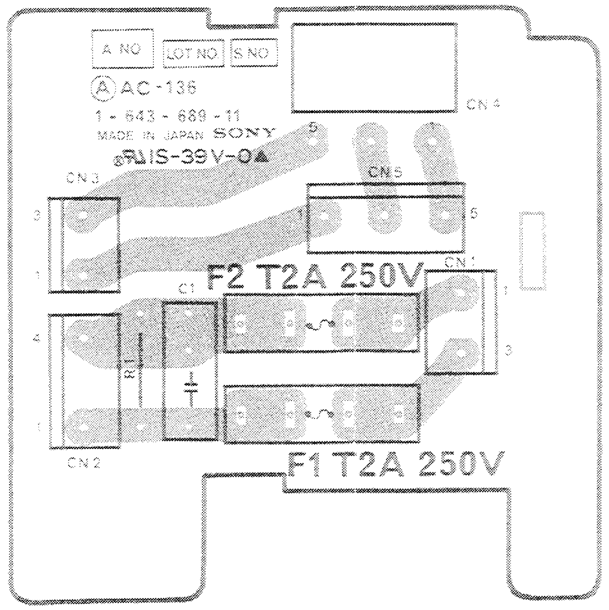
DR-153 (a), (b)

1-637-244-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


1-637-244-11
1
14
R1
10
8
9
CN1
C3
C1
C2
1
DR-153
CN3
9
A
9
CN2
1
R2
4
IC1
SONY
5
7
LOT NO.
S NO.
MADE IN JAPAN
A-6756
-022-A
1

DR-153 (a), (b) — A SIDE —
1-637-244-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

AC-136 ; AC INPUT
DC-53A ; AC-DC POWER REGULATOR

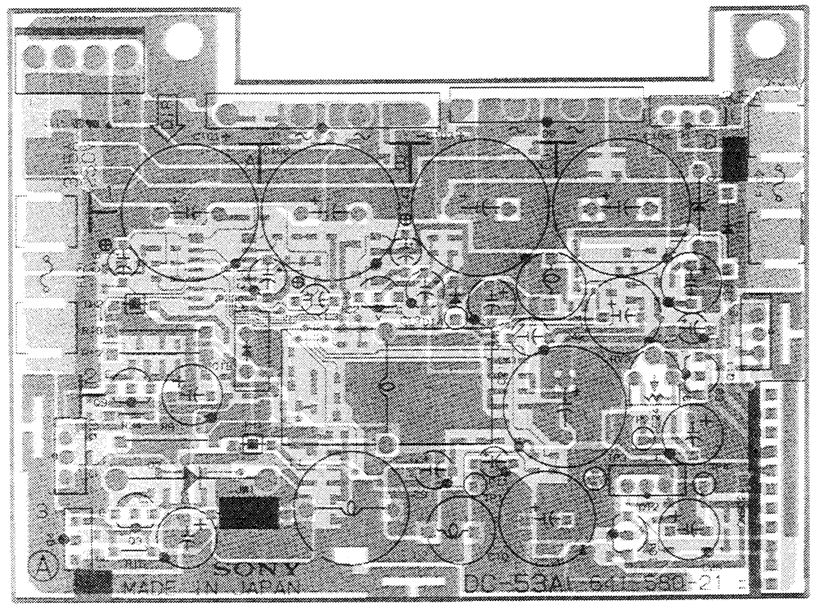

A NO
LOT NO
S.NO
Ⓐ AC-136
1-643-689-11
MADE IN JAPAN SONY
RUS-39V-0▲
CN3
CN4
CN5
CN1
CN2
C1
R1
F2 T2A 250V
F1 T2A 250V

AC-136 — A SIDE —
1-643-689-11 (1)
SVO-9500MDP

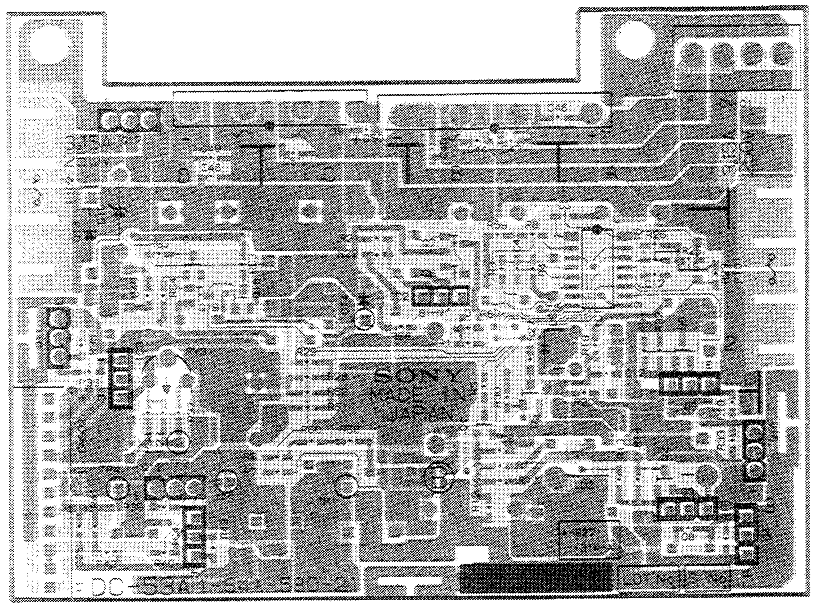
DC-53A (1-641-580-21)

CN101	A-1
CN902	D-3
D1	B-1
D2	A-3
D6	A-2
D9	C-1
D10	D-1
D11	D-2 *
D13	D-2
D14	C-2
F101	A-2
F102	D-1
IC1	A-2 *
IC2	B-2
IC3	D-2
IC4	D-3
L1	B-3
L2	C-3
L3	B-2
L4	D-2
Q1	B-3 *
Q2	A-2 *
Q3	A-3
Q4	A-3
Q5	B-3 *
Q6	B-2 *
Q7	B-2 *
Q8	A-2 *
Q9	A-3
Q10	A-3
Q11	D-2
Q12	D-3
Q17	D-1
Q18	D-2 *
Q19	D-2 *
RV3	D-2
TH1	A-3
TH2	A-2
TP1	C-3
TP2	D-2
TP3	D-2
TP4	D-2

* mark ; B SIDE mount

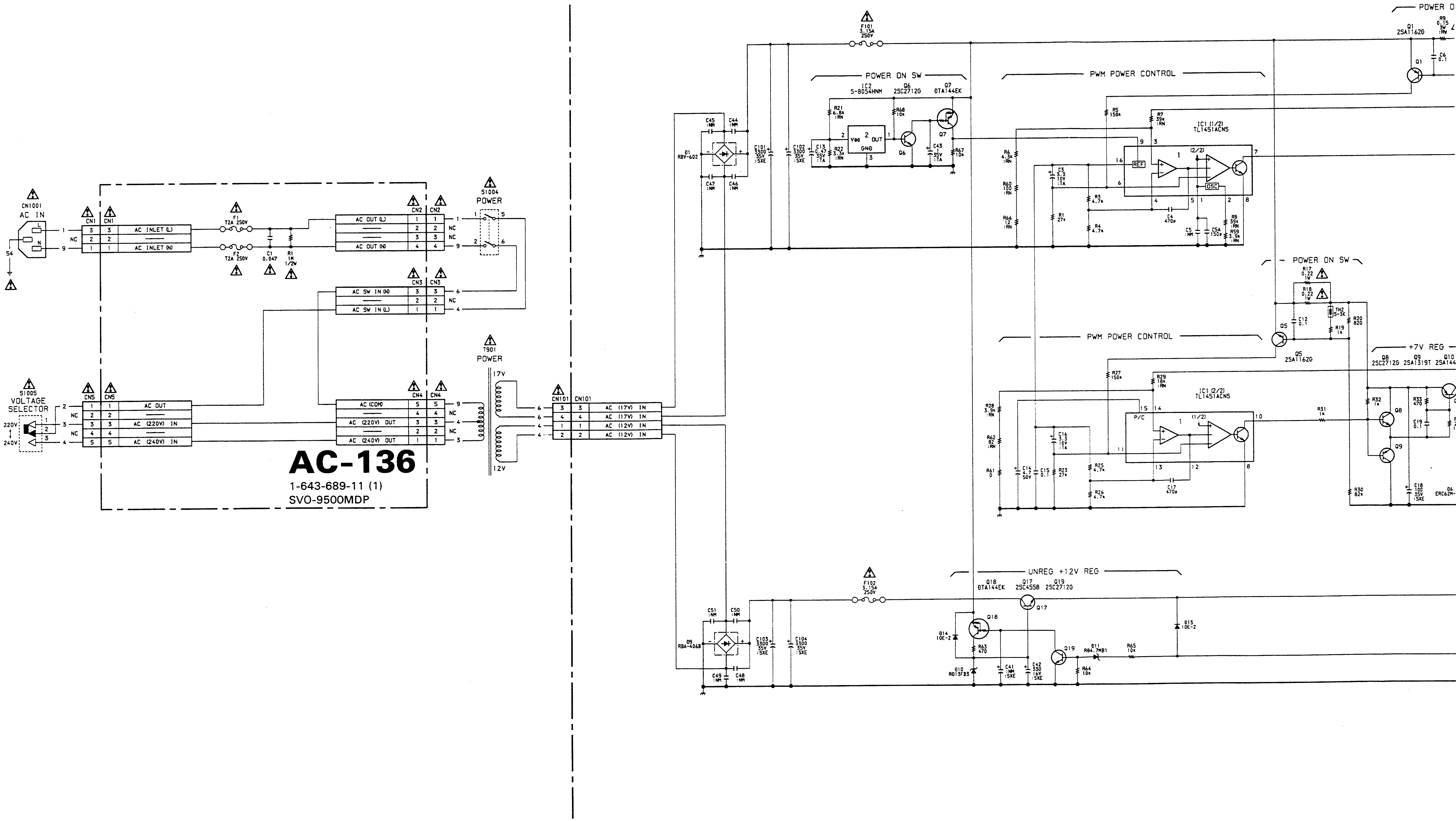

SONY
MADE IN JAPAN
DC-53A 1-641-580-21

DC-53A — A SIDE —
1-641-580-21 (1)
SVO-9500MDP

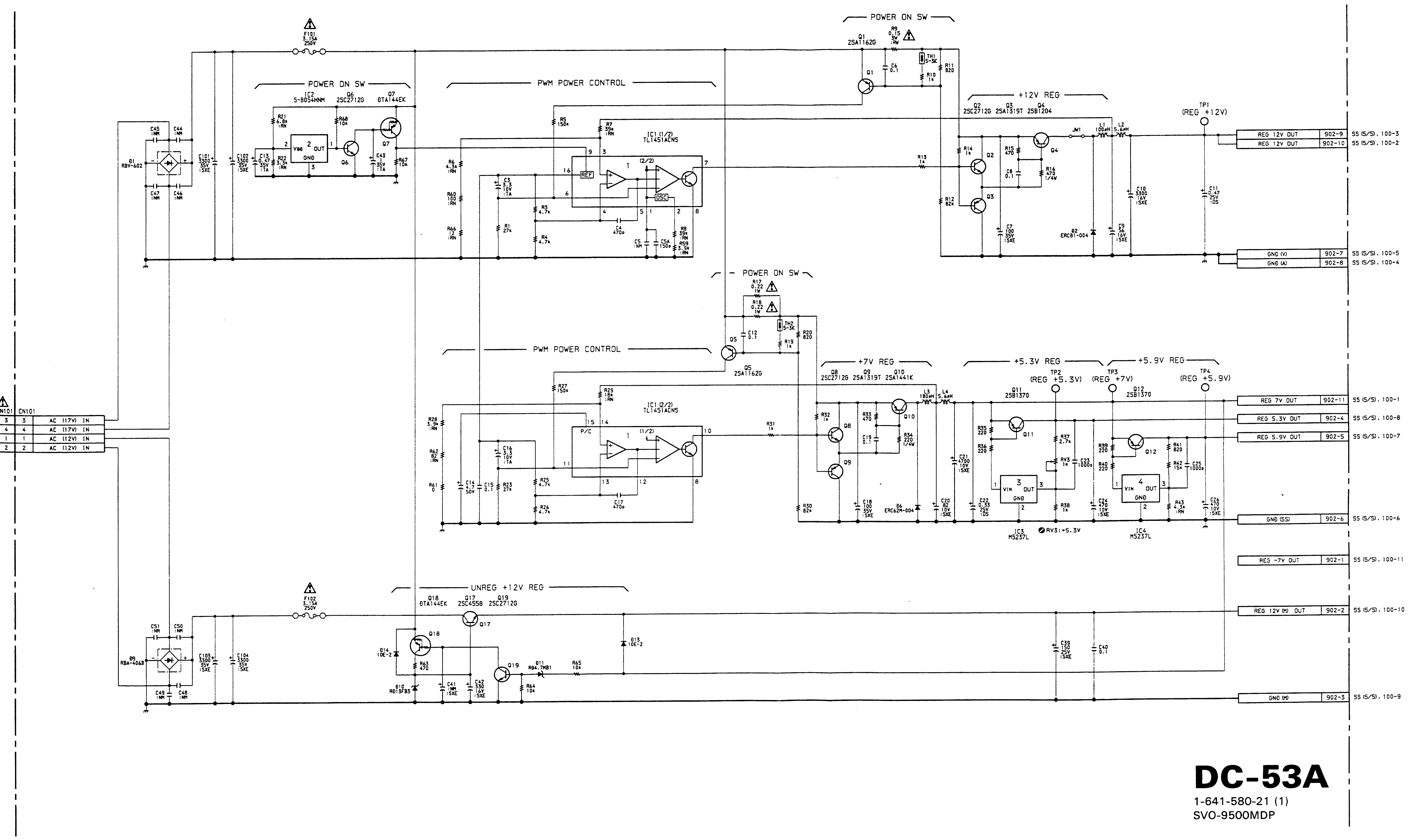

SONY
MADE IN JAPAN
DC-53A 1-641-580-21
LOT No.
S.No.

DC-53A — B SIDE —
1-641-580-21 (1)
SVO-9500MDP

AC-136 ; AC INPUT
DC-53A ; AC-DC POWER REGULATOR


CN1001
AC IN
S4
CN1
AC INLET (L)
AC INLET (N)
F1
T2A 250V
F2
T2A 250V
C1
0.047
R1
1M
1/2W
AC OUT (L)
AC OUT (N)
CN2
S1004
POWER
CN3
AC SW IN (N)
AC SW IN (L)
S1005
VOLTAGE
SELECTOR
220V
240V
CN5
AC OUT
AC (220V) IN
AC (240V) IN
CN4
AC (COM)
AC (220V) OUT
AC (240V) OUT
T901
POWER
17V
12V
AC-136
1-643-689-11 (1)
SVO-9500MDP
CN101
AC (17V) IN
AC (12V) IN
D1
RBV-602
F101
3.15A
250V
POWER ON SW
IC2
S-80854HNM
Q6
2SC2712G
Q7
DTA144EK
PWM POWER CONTROL
IC1 (1/2)
TL1451ACNS
REF
OSC
POWER ON SW
Q5
2SA1162G
IC1 (2/2)
TL1451ACNS
+7V REG
Q8
2SC2712G
Q9
2SA1319T
Q1
2SA1162G
UNREG +12V REG
Q18
DTA144EK
Q17
2SC4558
Q19
2SC2712G
F102
3.15A
250V
D9
RBA-406B
D14
10E-2
D13
10E-2
D10
RD13FB3
D11
RD4.7MB1

NOTE :
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.


POWER ON SW
PWM POWER CONTROL
POWER ON SW
+12V REG
POWER ON SW
PWM POWER CONTROL
+7V REG
+5.3V REG
+5.9V REG
UNREG +12V REG
F101 3.15A 250V
F102 3.15A 250V
CN101
AC (17V) IN
AC (17V) IN
AC (12V) IN
AC (12V) IN
IC1 (1/2) TL1451ACNS
IC1 (2/2) TL1451ACNS
IC2 S-8054HNM
Q1 2SA1162G
Q2 2SC2712G
Q3 2SA1319T
Q4 2SB1204
Q5 2SA1162G
Q6 2SC2712G
Q7 DTA144EK
Q8 2SC2712G
Q9 2SA1319T
Q10 2SA1441K
Q11 2SB1370
Q12 2SB1370
Q17 2SC4558
Q18 DTA144EK
Q19 2SC2712G
D1 RBV-602
D9 RBA-406B
IC3 M5237L
IC4 M5237L
RV3:+5.3V
TP1 (REG +12V)
TP2 (REG +5.3V)
TP3 (REG +7V)
TP4 (REG +5.9V)
REG 12V OUT 902-9 SS (5/5). 100-3
REG 12V OUT 902-10 SS (5/5). 100-2
GND (V) 902-7 SS (5/5). 100-5
GND (A) 902-8 SS (5/5). 100-4
REG 7V OUT 902-11 SS (5/5). 100-1
REG 5.3V OUT 902-4 SS (5/5). 100-8
REG 5.9V OUT 902-5 SS (5/5). 100-7
GND (SS) 902-6 SS (5/5). 100-6
REG -7V OUT 902-1 SS (5/5). 100-11
REG 12V (H) OUT 902-2 SS (5/5). 100-10
GND (H) 902-3 SS (5/5). 100-9
1
2
3
4
5

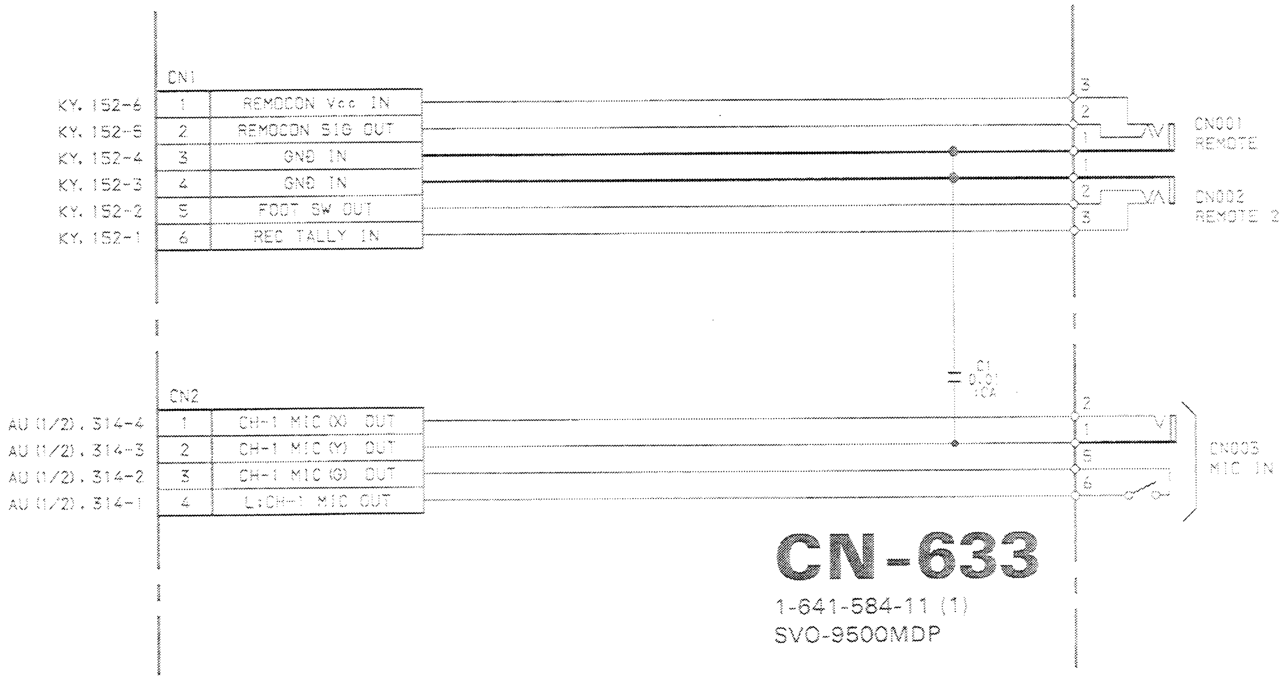
DC-53A

1-641-580-21 (1)
SVO-9500MDP

CN-633 ; CONNECTION of FRONT CONNECTOR

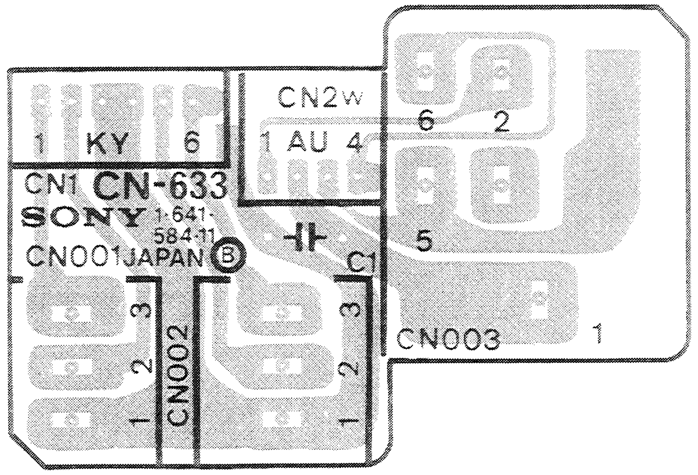
CP-183 ; CONNECTION of REAR CONNECTOR

DUS-442 ; INDICATE CONNECTOR


CN1
KY. 152-6
KY. 152-5
KY. 152-4
KY. 152-3
KY. 152-2
KY. 152-1
1 REMOCON Vcc IN
2 REMOCON SIG OUT
3 GND IN
4 GND IN
5 FOOT SW OUT
6 REC TALLY IN
CN001
REMOTE
CN002
REMOTE 2
C1
0.01
10A
CN2
AU (1/2), 314-4
AU (1/2), 314-3
AU (1/2), 314-2
AU (1/2), 314-1
1 CH-1 MIC (X) OUT
2 CH-1 MIC (Y) OUT
3 CH-1 MIC (G) OUT
4 L:CH-1 MIC OUT
CN003
MIC IN

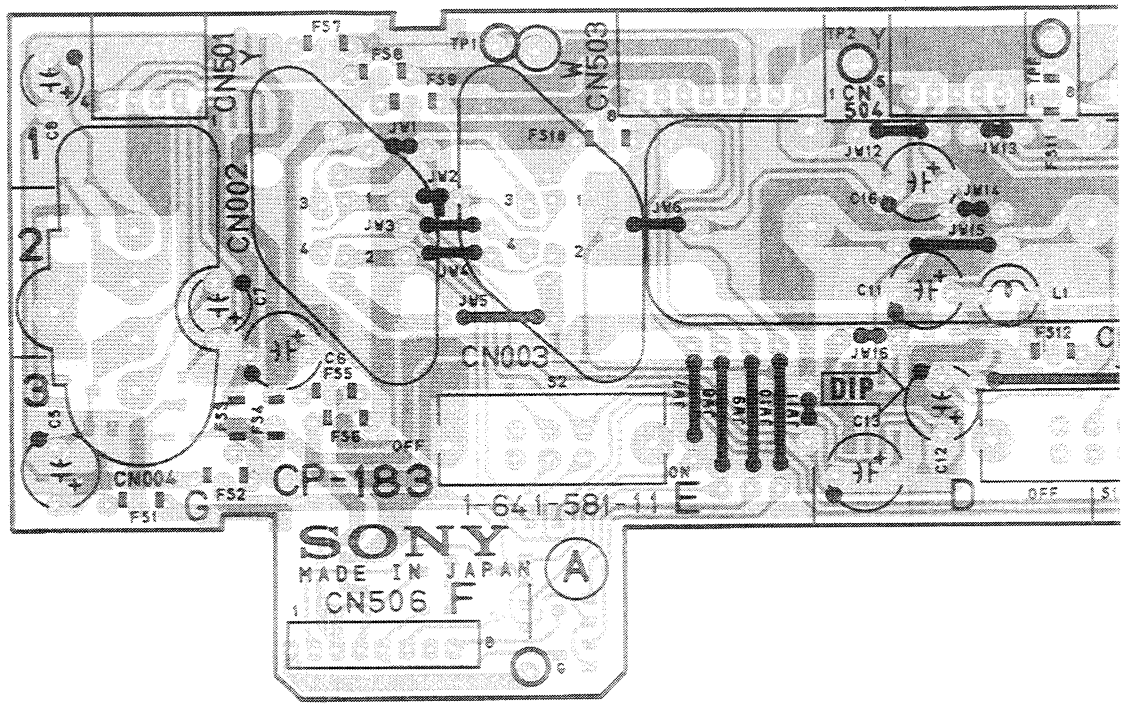
CN-633

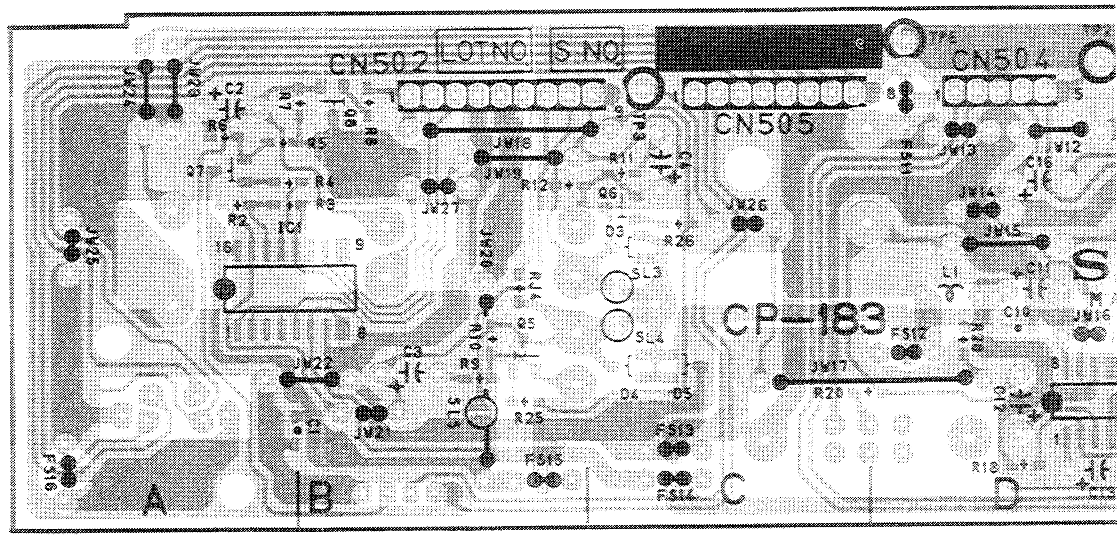
1-641-584-11 (1)
SVO-9500MDP


1 KY 6
CN2w
1 AU 4
6
2
CN1 CN-633
SONY 1-641-584-11
CN001JAPAN B
C1
5
3
2
1
CN002
CN003

CN-633 — B SIDE —

1-641-584-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

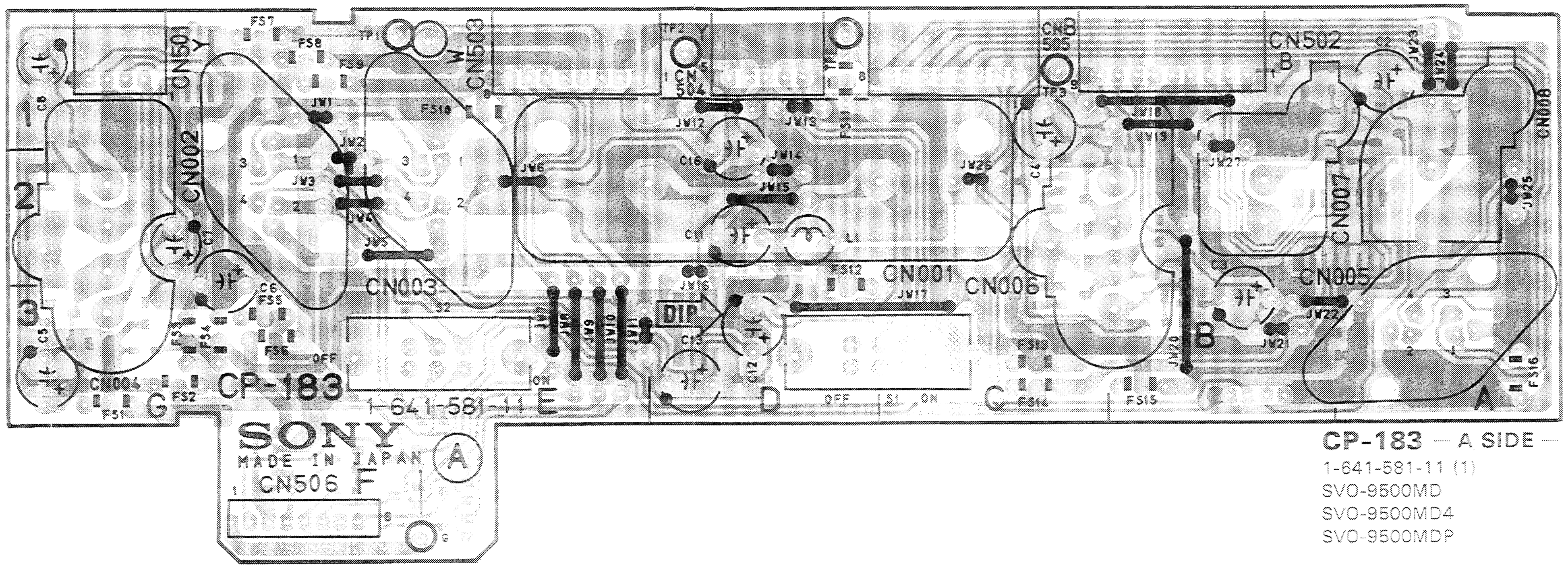

CN501
CN503
CN002
CN003
CN004
CN504
CN506
CP-183
1-641-581-11
SONY
MADE IN JAPAN
A
DIP
G
E
F
D


CN502
LOT NO.
S NO.
CN504
CN505
CP-183
IC1
A
B
C
D

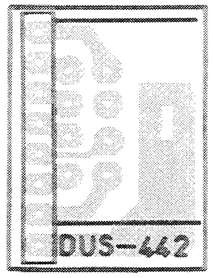
CN001
REMOTE

CN002
REMOTE 2

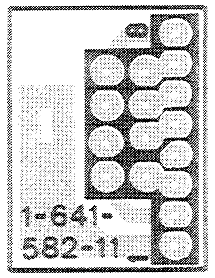
CN003
MIC IN


CN501
CN002
CN503
CN504
CN505
CN502
CN008
CN007
CN001
CN006
CN005
CN003
CN004
CN506
CP-183
1-641-581-11
SONY
MADE IN JAPAN
DIP
OFF S1 ON
A
B
C
D
E
F
G

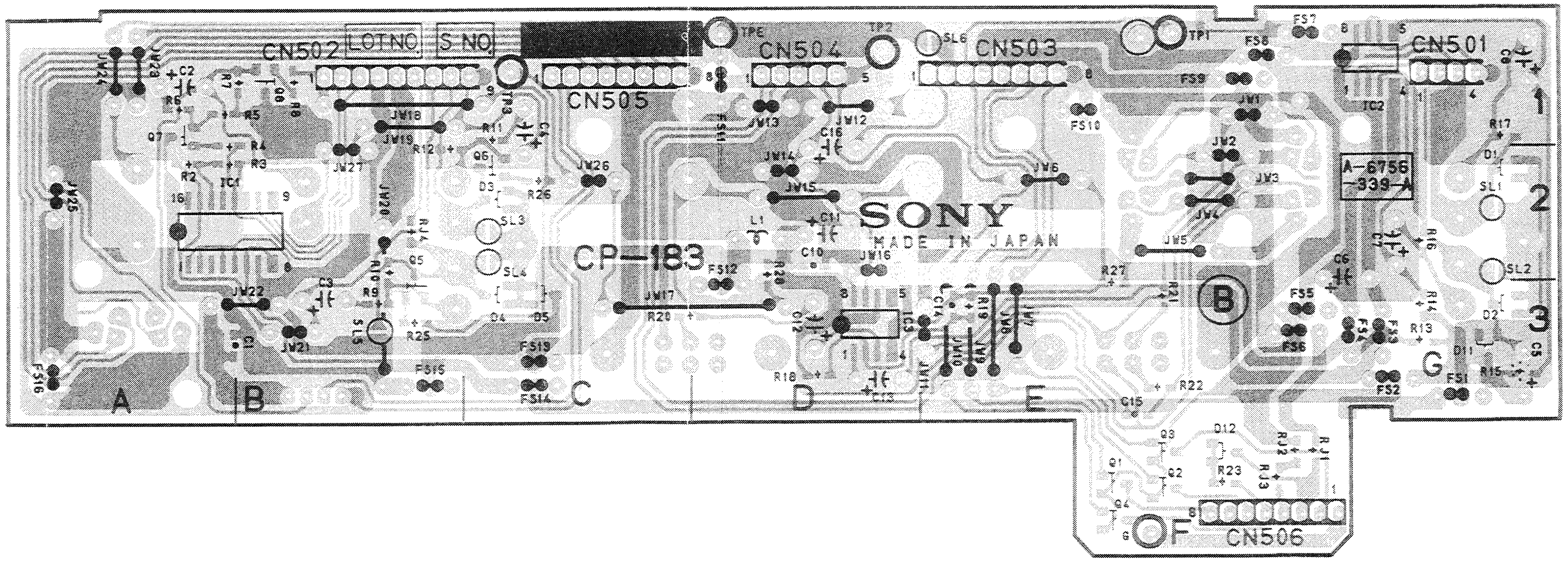
CP-183 — A SIDE —
1-641-581-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP



DUS-442 — A SIDE —
1-641-582-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP



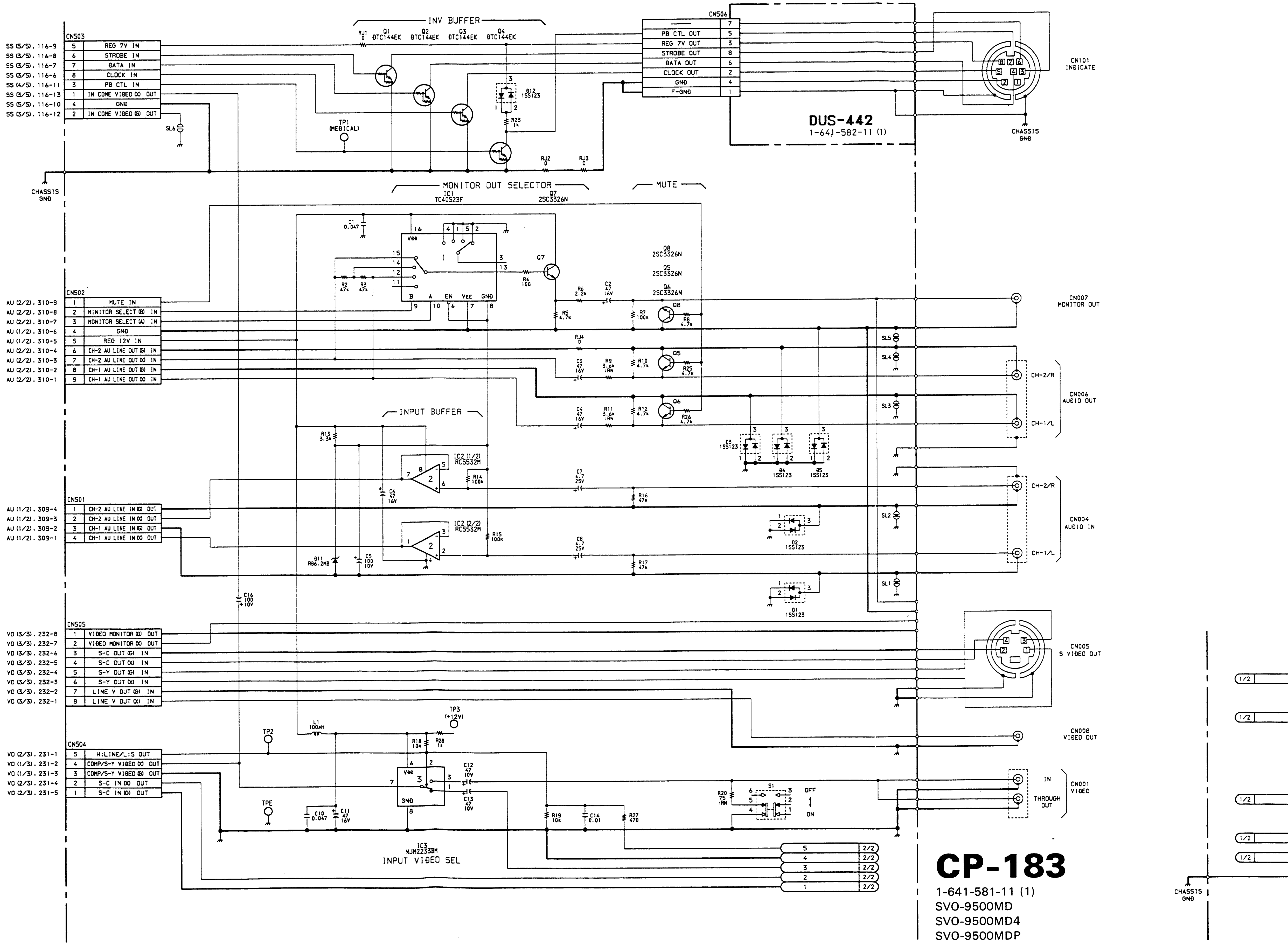
DUS-442 — B SIDE —
1-641-582-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


CN502
LOT NO
S NO
CN505
CN504
CN503
CN501
CN506
CP-183
SONY
MADE IN JAPAN
A-6756
-339-A
A
B
C
D
E
F
G

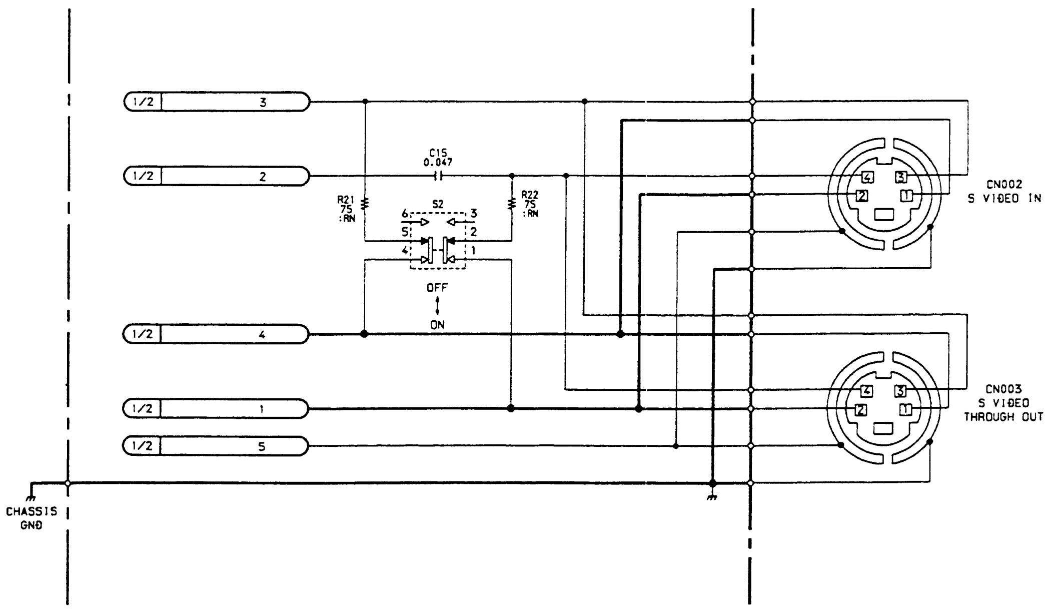
CP-183 — B SIDE —
1-641-581-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

CP-183; CONNECTION of REAR CONNECTOR

DUS-442; INDICATE CONNECTOR

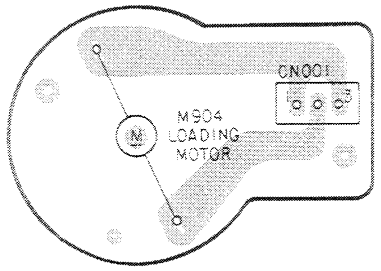

CN503
SS (5/5). 116-9 5 REG 7V IN
SS (3/5). 116-8 6 STROBE IN
SS (3/5). 116-7 7 DATA IN
SS (3/5). 116-6 8 CLOCK IN
SS (4/5). 116-11 3 PB CTL IN
SS (3/5). 116-13 1 IN COME VIDEO (X) OUT
SS (5/5). 116-10 4 GND
SS (3/5). 116-12 2 IN COME VIDEO (G) OUT
SL6
CHASSIS GND
INV BUFFER
RJ1 0
Q1 DTC144EK
Q2 DTC144EK
Q3 DTC144EK
Q4 DTC144EK
D12 1SS123
R23 1k
TP1 (MEDICAL)
RJ2 0
RJ3 0
CN506
7
PB CTL OUT 5
REG 7V OUT 3
STROBE OUT 8
DATA OUT 6
CLOCK OUT 2
GND 4
F-GND 1
DUS-442
1-641-582-11 (1)
CN101 INDICATE
CHASSIS GND
MONITOR OUT SELECTOR
IC1 TC4052BF
Q7 2SC3326N
MUTE
C1 0.047
R2 47k
R3 47k
R4 100
Q8 2SC3326N
Q5 2SC3326N
Q6 2SC3326N
R6 2.2k
C2 47 16V
R5 4.7k
R7 100k
R8 4.7k
RJ4 0
C3 47 16V
R9 3.6k
R10 4.7k
R25 4.7k
C4 47 16V
R11 3.6k
R12 4.7k
R26 4.7k
CN502
AU (2/2). 310-9 1 MUTE IN
AU (2/2). 310-8 2 MONITOR SELECT (B) IN
AU (2/2). 310-7 3 MONITOR SELECT (A) IN
AU (1/2). 310-6 4 GND
AU (1/2). 310-5 5 REG 12V IN
AU (2/2). 310-4 6 CH-2 AU LINE OUT (G) IN
AU (2/2). 310-3 7 CH-2 AU LINE OUT (X) IN
AU (2/2). 310-2 8 CH-1 AU LINE OUT (G) IN
AU (2/2). 310-1 9 CH-1 AU LINE OUT (X) IN
CN007 MONITOR OUT
SL5
SL4
SL3
CH-2/R
CH-1/L
CN006 AUDIO OUT
D3 1SS123
D4 1SS123
D5 1SS123
INPUT BUFFER
R13 3.3k
IC2 (1/2) RC5532M
R14 100k
C6 47 16V
C7 4.7 25V
R16 47k
CN501
AU (1/2). 309-4 1 CH-2 AU LINE IN (G) OUT
AU (1/2). 309-3 2 CH-2 AU LINE IN (X) OUT
AU (1/2). 309-2 3 CH-1 AU LINE IN (G) OUT
AU (1/2). 309-1 4 CH-1 AU LINE IN (X) OUT
IC2 (2/2) RC5532M
R15 100k
C8 4.7 25V
R17 47k
D11 RD6.2MB
C5 100 10V
D2 1SS123
D1 1SS123
SL2
SL1
CN004 AUDIO IN
C16 100 10V
CN505
VO (3/3). 232-8 1 VIDEO MONITOR (G) OUT
VO (3/3). 232-7 2 VIDEO MONITOR (X) OUT
VO (3/3). 232-6 3 S-C OUT (G) IN
VO (3/3). 232-5 4 S-C OUT (X) IN
VO (3/3). 232-4 5 S-Y OUT (G) IN
VO (3/3). 232-3 6 S-Y OUT (X) IN
VO (3/3). 232-2 7 LINE V OUT (G) IN
VO (3/3). 232-1 8 LINE V OUT (X) IN
CN005 S VIDEO OUT
CN008 VIDEO OUT
TP3 (+12V)
L1 100μH
TP2
R18 10k
R28 1k
CN504
VO (2/3). 231-1 5 H:LINE/L:S OUT
VO (1/3). 231-2 4 COMP/S-Y VIDEO (X) OUT
VO (1/3). 231-3 3 COMP/S-Y VIDEO (G) OUT
VO (2/3). 231-4 2 S-C IN (X) OUT
VO (2/3). 231-5 1 S-C IN (G) OUT
C12 47 10V
C13 47 10V
TPE
C10 0.047
C11 47 16V
IC3 NJM2233BM INPUT VIDEO SEL
R19 10k
C14 0.01
R27 470
R20 75
S1
OFF
ON
IN
THROUGH OUT
CN001 VIDEO
5 2/2
4 2/2
3 2/2
2 2/2
1 2/2
1/2
CHASSIS GND
CP-183
1-641-581-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

CP-183, DUS-442

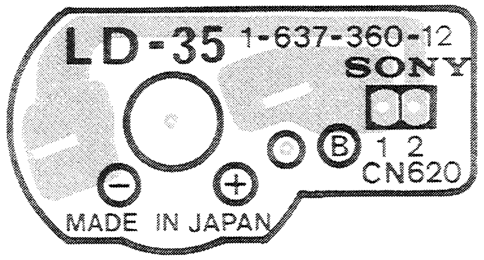

1/2 3
1/2 2
1/2 4
1/2 1
1/2 5
C15
0.047
R21
75
:RN
R22
75
:RN
S2
6 5 4 3 2 1
OFF
ON
CN002
S VIDEO IN
CN003
S VIDEO
THROUGH OUT
CHASSIS
GND

13-57

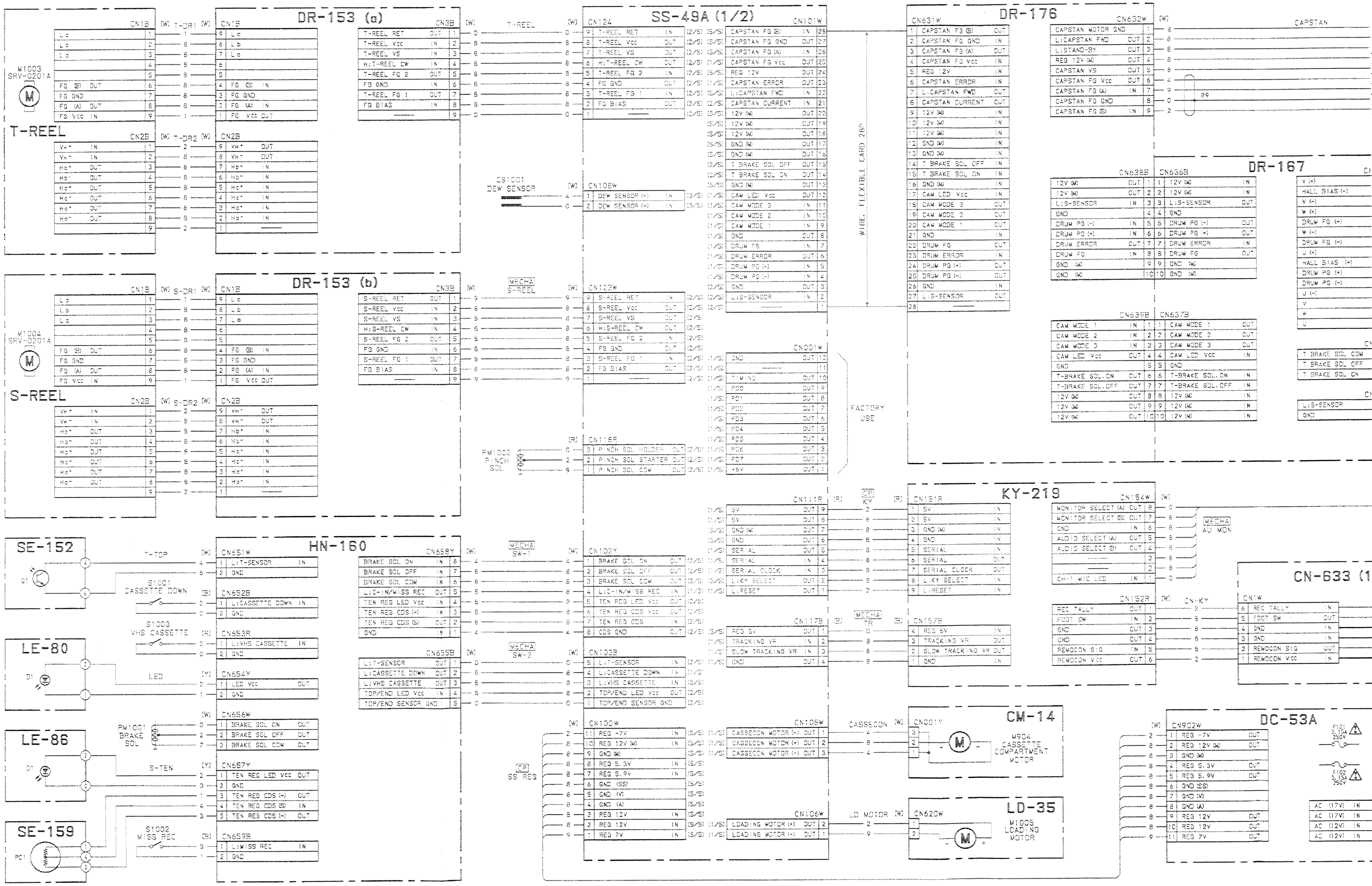
FRAME (1/2)
CM-14 ; CASSETTE COMPARTMENT MOTOR
LD-35 ; LOADING MOTOR


CN001
M904
LOADING
MOTOR
M

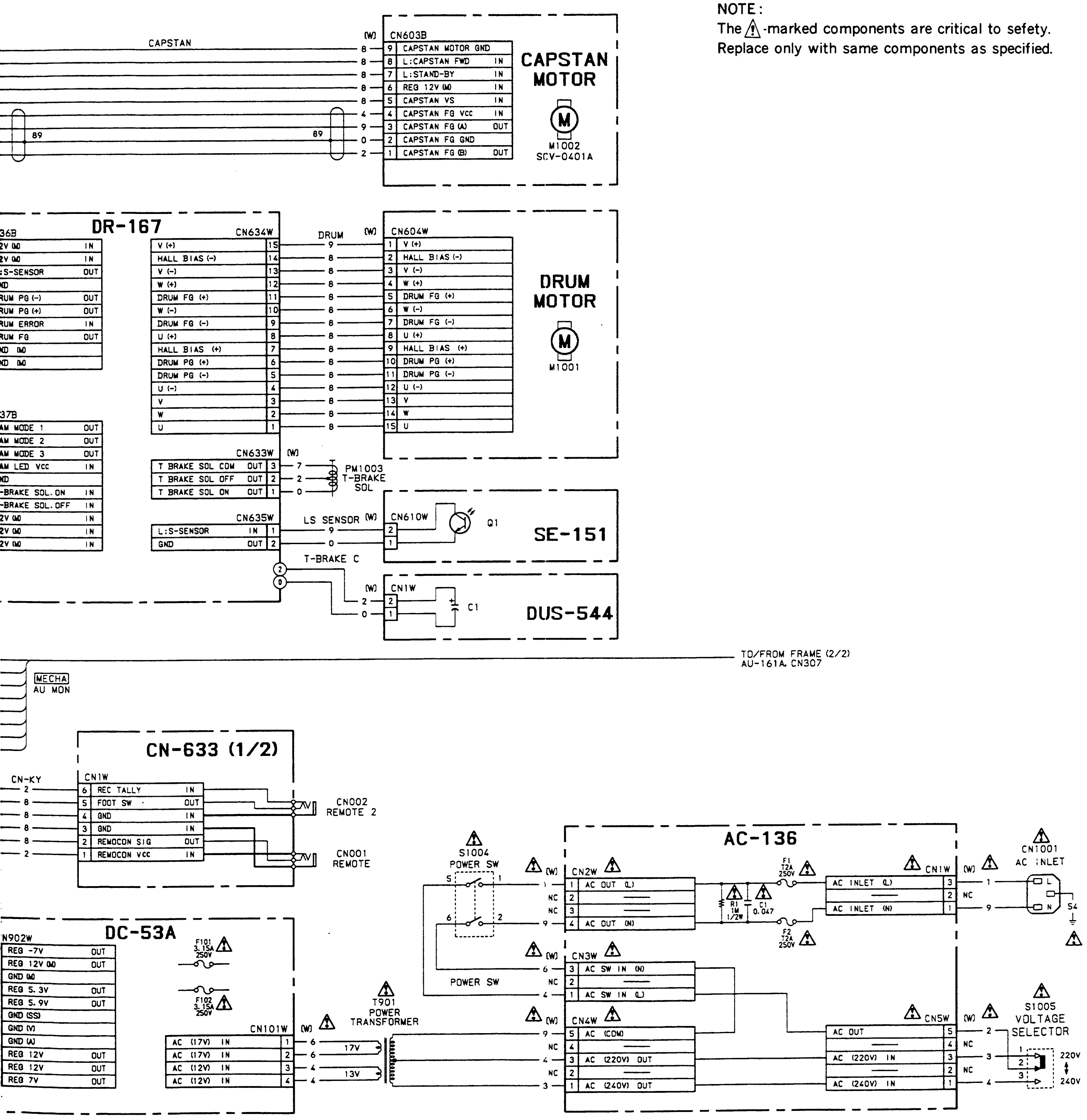
CM-14 — SOLDERING SIDE —
1-630-505-21 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


LD-35 1-637-360-12
SONY
B
1 2
CN620
MADE IN JAPAN

LD-35 — B SIDE —
1-637-360-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


DR-153 (a)
T-REEL
M1003
SRV-0201A
DR-153 (b)
S-REEL
M1004
SRV-0201A
SS-49A (1/2)
DR-176
WIRE, FLEXIBLE CARD 28P
CAPSTAN
DR-167
CS1001
DEW SENSOR
MECHA S-REEL
PM1002
PINCH SOL
FACTORY USE
KY-219
MECHA AU MON
CN-633 (1
SE-152
HN-160
S1001
CASSETTE DOWN
S1003
VHS CASSETTE
LE-80
LED
LE-86
S-TEN
PM1001
BRAKE SOL
SE-159
S1002
MISS REC
MECHA SW-1
MECHA SW-2
CP SS REG
MECHA TR
CM-14
M904
CASSETTE COMPARTMENT MOTOR
CASSECON
LD-35
M1005
LOADING MOTOR
LD MOTOR
DC-53A
CN-KY

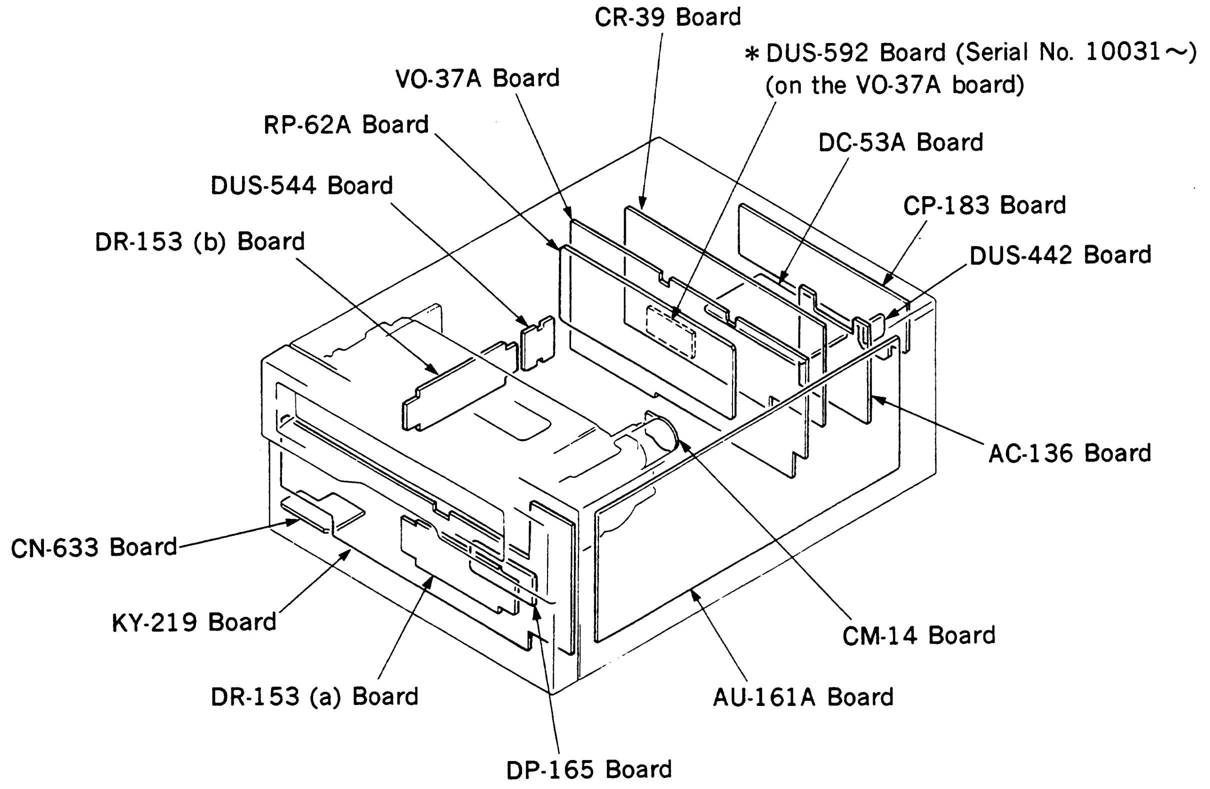
NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.

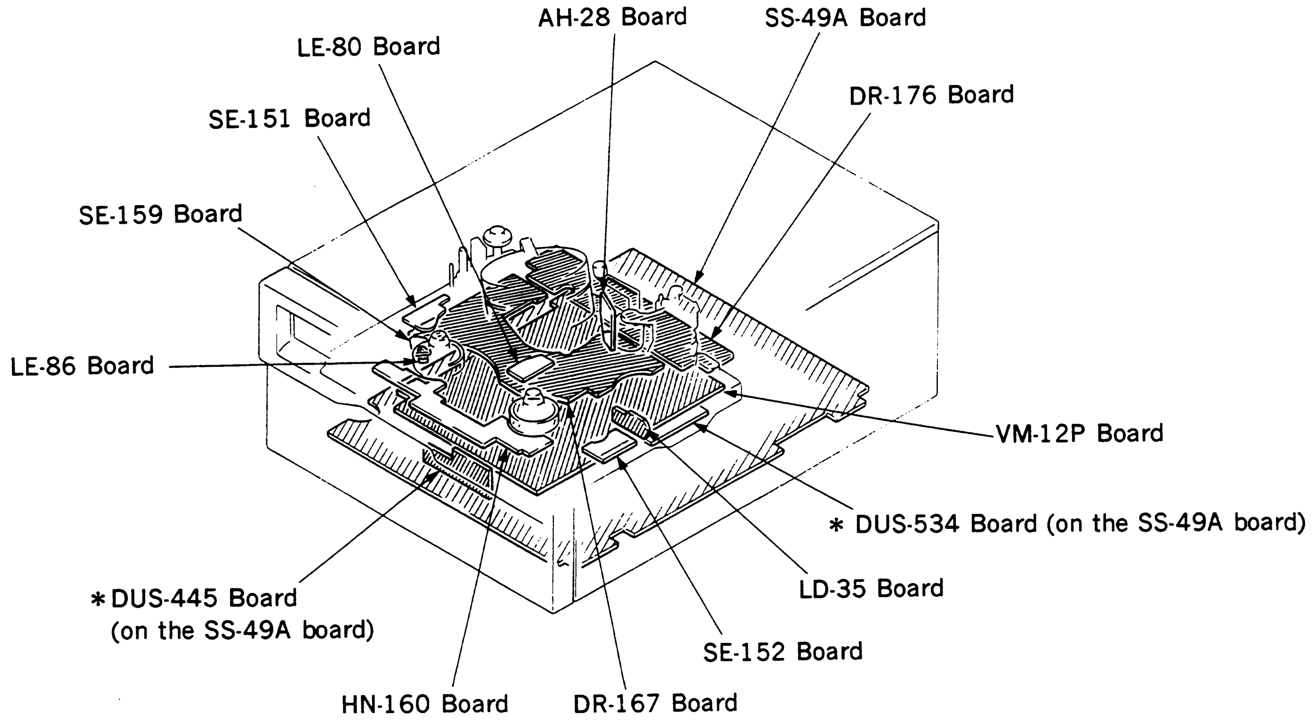

CAPSTAN
CN603B
CAPSTAN MOTOR GND
L:CAPSTAN FWD IN
L:STAND-BY IN
REG 12V IN
CAPSTAN VS IN
CAPSTAN FG VCC IN
CAPSTAN FG (A) OUT
CAPSTAN FG GND
CAPSTAN FG (B) OUT
CAPSTAN MOTOR
M
M1002
SCV-0401A
DR-167
CN634W
DRUM
CN604W
DRUM MOTOR
M
M1001
CN633W
T BRAKE SOL COM OUT
T BRAKE SOL OFF OUT
T BRAKE SOL ON OUT
PM1003
T-BRAKE SOL
CN635W
L:S-SENSOR IN
GND OUT
LS SENSOR
CN610W
Q1
SE-151
T-BRAKE C
CN1W
C1
DUS-544
TO/FROM FRAME (2/2)
AU-161A CN307
MECHA
AU MON
CN-633 (1/2)
CN-KY
REC TALLY IN
FOOT SW OUT
GND IN
GND IN
REMOCON SIG OUT
REMOCON VCC IN
CN002
REMOTE 2
CN001
REMOTE
DC-53A
CN902W
REG -7V OUT
REG 12V OUT
REG 5.3V OUT
REG 5.9V OUT
REG 12V OUT
REG 12V OUT
REG 7V OUT
F101 3.15A 250V
F102 3.15A 250V
CN101W
AC (17V) IN
AC (17V) IN
AC (12V) IN
AC (12V) IN
T901
POWER TRANSFORMER
17V
13V
S1004
POWER SW
AC-136
CN2W
AC OUT (L)
AC OUT (N)
CN3W
AC SW IN (N)
AC SW IN (L)
CN4W
AC (COM)
AC (220V) OUT
AC (240V) OUT
F1 T2A 250V
F2 T2A 250V
R1 1M 1/2W
C1 0.047
CN1W
AC INLET (L)
AC INLET (N)
CN5W
AC OUT
AC (220V) IN
AC (240V) IN
CN1001
AC INLET
S1005
VOLTAGE SELECTOR
220V
240V

FRAME (1/2)

SVO-9500MDP (1)

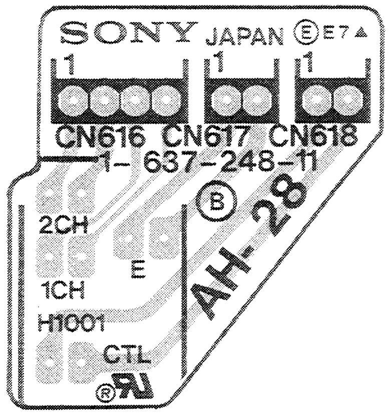
LOCATION OF PRINTED CIRCUIT BOARD


CR-39 Board
∗DUS-592 Board (Serial No. 10031∼)
(on the VO-37A board)
VO-37A Board
RP-62A Board
DC-53A Board
DUS-544 Board
CP-183 Board
DR-153 (b) Board
DUS-442 Board
AC-136 Board
CN-633 Board
KY-219 Board
CM-14 Board
DR-153 (a) Board
AU-161A Board
DP-165 Board

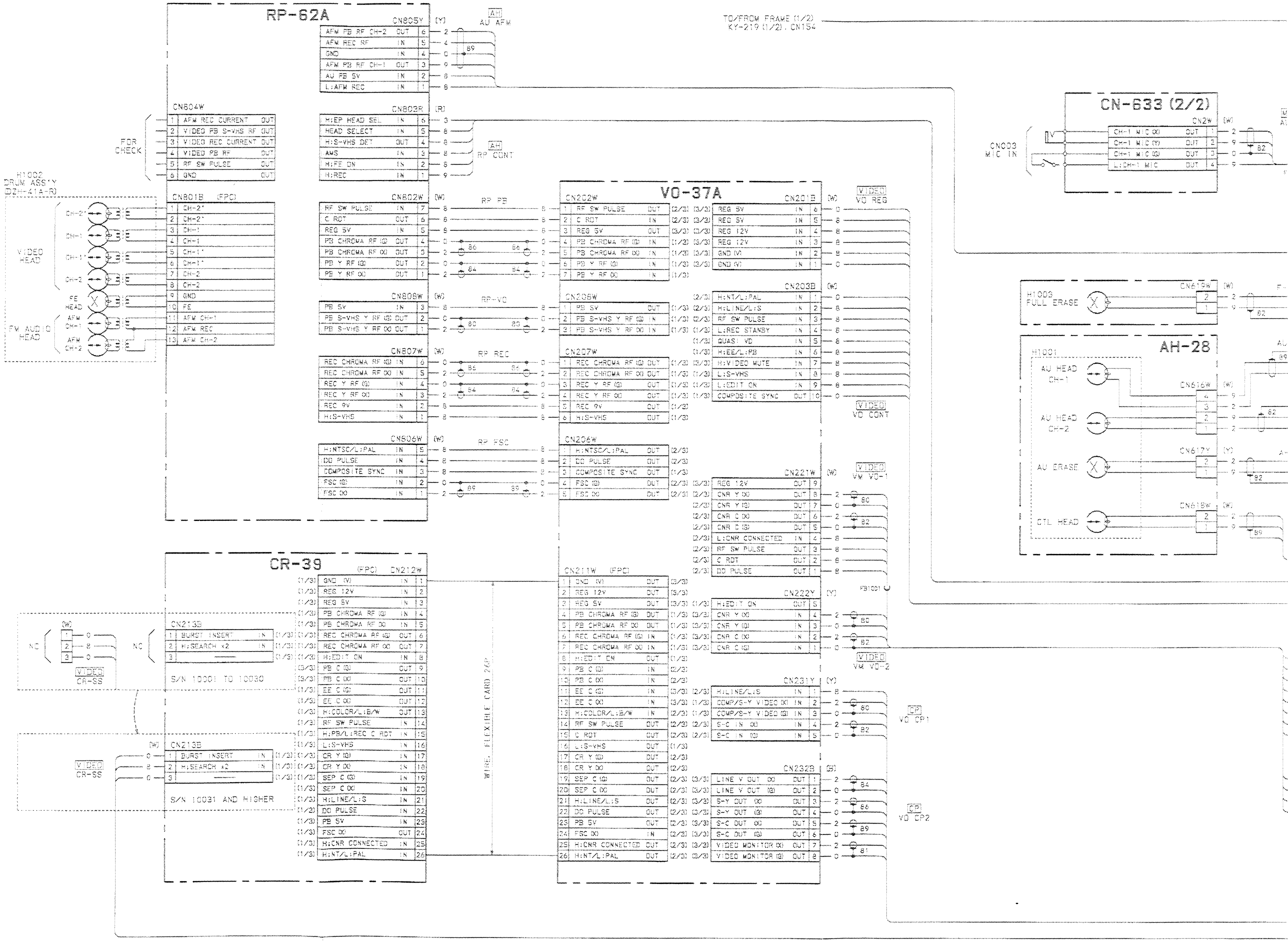

AH-28 Board
SS-49A Board
LE-80 Board
DR-176 Board
SE-151 Board
SE-159 Board
LE-86 Board
VM-12P Board
∗DUS-534 Board (on the SS-49A board)
∗DUS-445 Board
(on the SS-49A board)
LD-35 Board
SE-152 Board
HN-160 Board
DR-167 Board

NOTE:
Printed circuit boards marked with ∗ on the above illustrations are omitted from the frame diagrams.

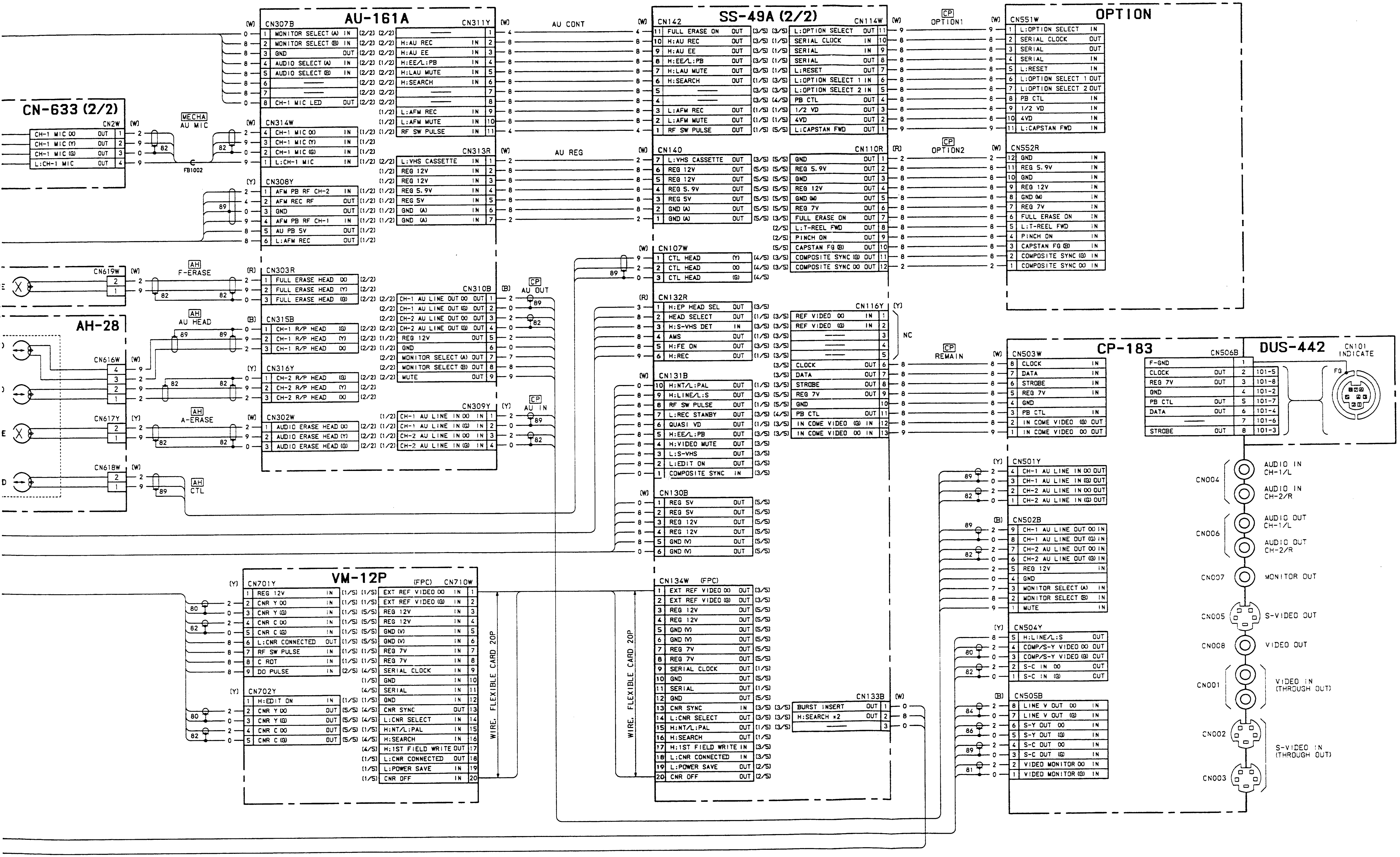
FRAME (2/2)
AH-28 ; AUDIO/ERASE/CTL HEAD


SONY JAPAN
CN616 CN617 CN618
1-637-248-11
AH-28
2CH
E
1CH
H1001
CTL

AH-28 — B SIDE —
1-637-248-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


RP-62A
VO-37A
CR-39
CN-633 (2/2)
AH-28
CN805Y
CN803R
CN804W
CN801B (FPC)
CN802W
CN808W
CN807W
CN806W
CN202W
CN201B
CN208W
CN203B
CN207W
CN206W
CN221W
CN211W (FPC)
CN222Y
CN231Y
CN232B
CN212W
CN213B
TO/FROM FRAME (1/2) KY-219 (1/2), CN154
MIC IN
H1003 FULL ERASE
AU HEAD CH-1
AU HEAD CH-2
AU ERASE
CTL HEAD
FOR CHECK
VIDEO HEAD
FM AUDIO HEAD
S/N 10001 TO 10030
S/N 10031 AND HIGHER
WIRE, FLEXIBLE CARD 26P

NOTE :
The ⚠-marked components are critical to safety.
Replace only with same components as specified.


CN-633 (2/2)
AH-28
AU-161A
SS-49A (2/2)
OPTION
CP-183
DUS-442
VM-12P
CN307B
CN311Y
CN314W
CN313R
CN308Y
CN303R
CN310B
CN315B
CN316Y
CN302W
CN309Y
CN142
CN114W
CN140
CN110R
CN107W
CN132R
CN116Y
CN131B
CN130B
CN134W
CN133B
CN551W
CN552R
CN503W
CN506B
CN101 INDICATE
CN501Y
CN502B
CN504Y
CN505B
CN701Y
CN702Y
CN710W
CN2W
CN619W
CN616W
CN617Y
CN618W
MECHA AU MIC
AH F-ERASE
AH AU HEAD
AH A-ERASE
AH CTL
CP AU OUT
CP AU IN
CP OPTION1
CP OPTION2
CP REMAIN
AU CONT
AU REG
NC
WIRE, FLEXIBLE CARD 20P
CN004 AUDIO IN CH-1/L
AUDIO IN CH-2/R
CN006 AUDIO OUT CH-1/L
AUDIO OUT CH-2/R
CN007 MONITOR OUT
CN005 S-VIDEO OUT
CN008 VIDEO OUT
CN001 VIDEO IN (THROUGH OUT)
CN002 S-VIDEO IN (THROUGH OUT)
CN003

FRAME (2/2)

SVO-9500MDP (1)

SECTION 14
SPARE PARTS AND FIXTURES

14-1. PARTS INFORMATION

(1) Components marked with ⚠ on the spare parts list are critical to safe operation. Replace these components with Sony Parts whose part numbers appear in this manual or in service manual supplements published by Sony.

(2) Spare Parts supplied from the Sony Parts Center will sometimes have a different shape from the original parts. This is due to **improved parts and/or engineering changes or standardization of genuine parts.**
This manual's spare parts list indicate the part numbers of **the standardized genuine parts at the present.** Regarding engineering part changes by the engineering department, refer to Sony service bulletins and service manual supplements.

(3) The parts marked with **s** in the SP (Supply Code) column of the parts list are normally stocked for replacement purposes. The parts marked with **o** in the SP column are not normally required for routine service work. Orders for parts marked with **o** will be processed, but allow for additional delivery time.

(4) Items with no part mumber and/or no description are not stocked because they are seldom required for routine service.

(5) All resistors are in ohms.

14-2. EXPLODED VIEWS

- Exploded views are composed of the following blocks.

(1) Ornamental panel block .... Page 14-3
    Top panel
    Front panel
    U case
    Rear panel

(2) Printed circuit boards .... Page 14-4
    Power switch
    Power transformer
    Remote control jack
    Voltage selector

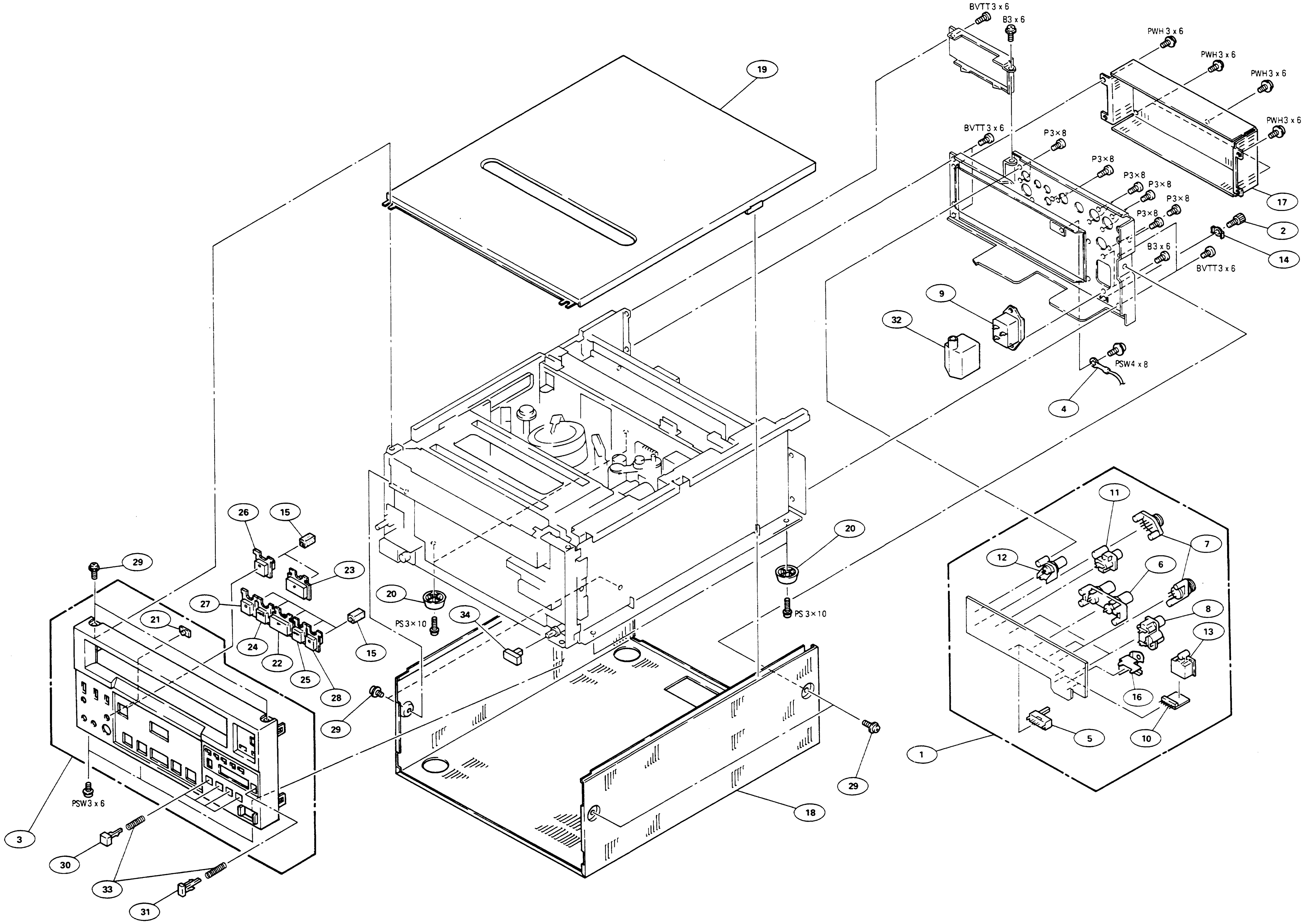
(3) Cassette compartment block .... Page 14-5

(4) Head drum and tape run blocks .... Page 14-6
    Head drum
    Cleaning roller
    Tape guides
    Stationary heads
    Slide rails

(5) Reel table and pinch roller blocks .... Page 14-7
    S/T reel table
    Pinch roller block
    Tension regulator arm
    RVS tape guide

(6) Mechanism control block .... Page 14-8
    Reel motor
    Capstan motor
    Cam motor block
    S/T brake arm
    Threading gear assembly

Ornamental panel block


19
BVTT3 x 6
B3 x 6
PWH3 x 6
PWH3 x 6
PWH3 x 6
PWH3 x 6
BVTT3 x 6
P3×8
P3×8
P3×8
P3×8
P3×8
P3×8
B3 x 6
BVTT3 x 6
17
2
14
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PS 3×10
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PS3×10
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PSW3 x 6
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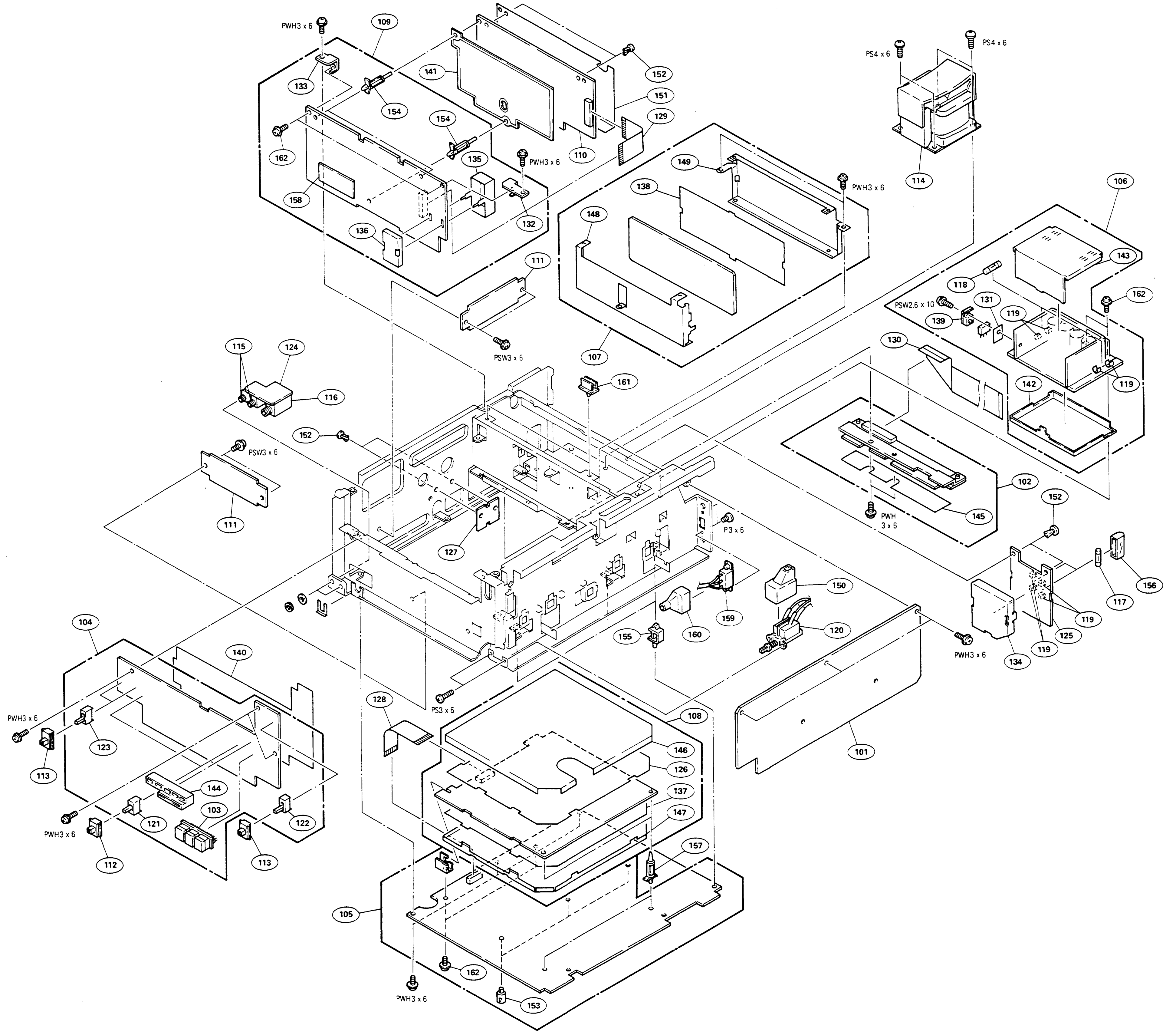
No.		Part No.	SP	Description
1		A-6756-339-A	o	MOUNTED CIRCUIT BOARD. CP-183
2		X-2068-004-0	s	TERMINAL ASSY
3		X-3166-686-4	o	PANEL (P) SUB ASSY. FRONT
4		1-535-316-11	o	TERMINAL. GROUND (M4)
5		1-570-145-11	s	SWITCH. SLIDE
6		1-573-580-11	s	CONNECTOR. DUAL BNC. FEMALE
7		1-573-590-12	s	CONNECTOR. ROUND 4P. FEMALE
8		1-573-744-11	s	JACK. PIN 2P. FEMALE
9	⚠	1-580-375-11	s	INLET. AC 3P. MALE
10		1-641-582-11	o	PRINTED CIRCUIT BOARD. DUS-442
11		1-691-273-11	s	JACK. PIN 1P. FEMALE
12		1-691-274-11	s	CONNECTOR. BNC. FEMALE
13		1-691-287-11	s	CONNECTOR. ROUND 8P. FEMALE
14		2-068-008-00	s	WASHER
15		2-284-744-00	o	CUSHION (B). KEY
16		3-177-786-01	o	BRACKET. 8P CONNECTOR
17		3-173-493-02	o	COVER. TR
18		3-173-496-01	o	CASE. U
19		3-173-497-01	o	PANEL. TOP
20		3-556-952-01	s	FOOT. M
21		3-648-149-41	o	COVER (DIA.4). LAMP
22		3-672-782-02	s	KEY TOP (A)
23		3-672-782-21	s	KEY TOP (A)
24		3-672-783-02	s	KEY TOP (B)
25		3-672-783-12	s	KEY TOP (B)
26		3-672-783-71	s	KEY TOP (B)
27		3-672-783-81	s	KEY TOP (B)
28		3-672-783-91	s	KEY TOP (B)
29		3-719-159-01	s	SCREW (M3). (+BW)
30		3-733-603-01	s	KEY TOP
31		3-733-606-11	s	PUSH BUTTON (5x9)
32		4-605-946-01	o	COVER. 3P INLET
33		4-866-613-00	s	SPRING. COMPRESSION
34		3-177-530-01	s	PUSH BUTTON (L)

Printed circuit boards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PWH3 x 6
PS4 x 6
PS4 x 6
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PSW2.6 x 10
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PSW3 x 6
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PSW3 x 6
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PS3 x 6
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PWH3 x 6
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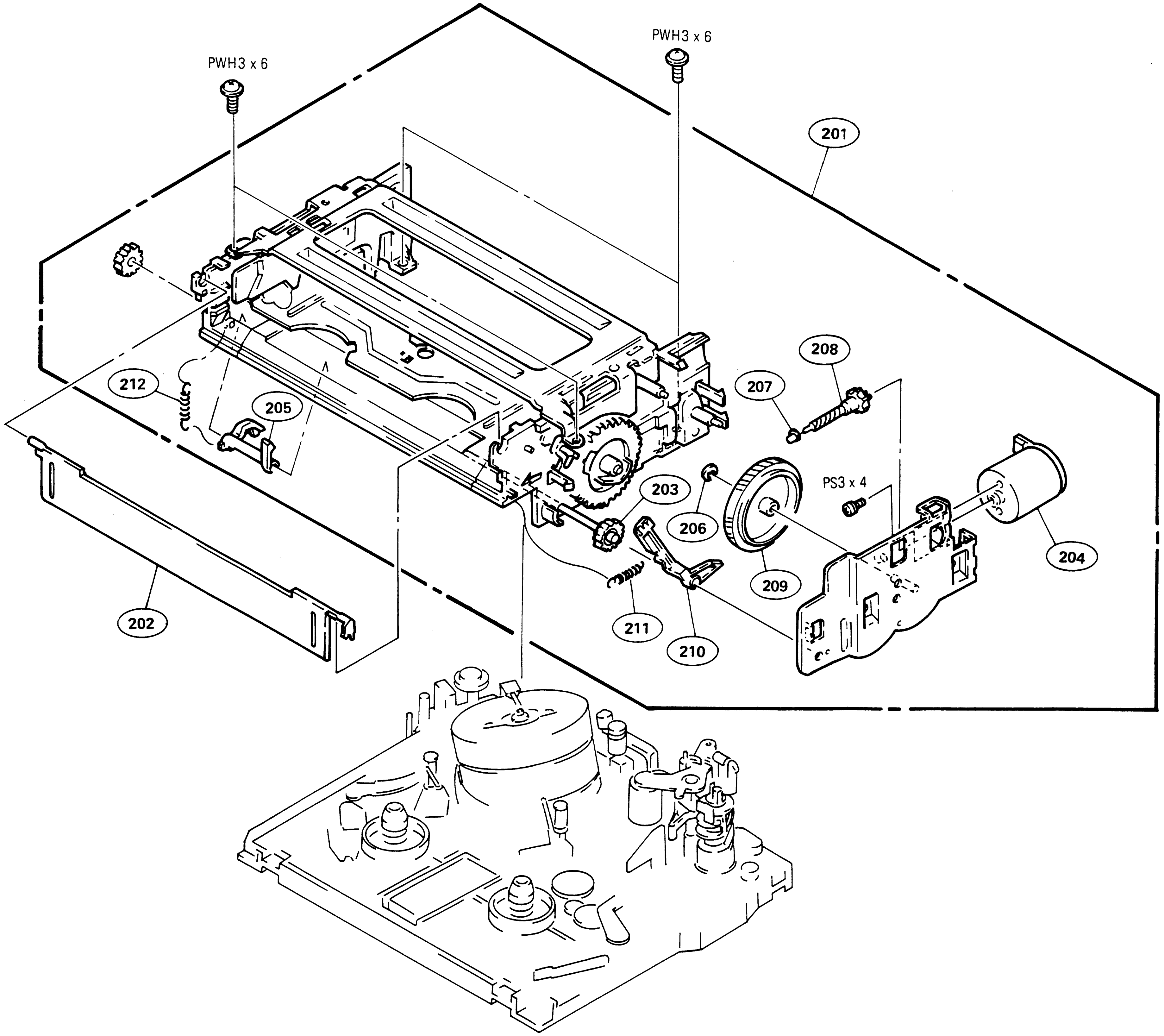
No.	Part No.	SP	Description
101	A-8271-313-B	o	MOUNTED CIRCUIT BOARD. AU-161A
102	A-6715-459-A	o	MOUNTED CIRCUIT BOARD. DR-176
103	A-6716-647-A	o	MOUNTED CIRCUIT BOARD. DP-165
104	A-6717-646-A	o	MOUNTED CIRCUIT BOARD. KY-219
105	A-8271-315-A	o	MOUNTED CIRCUIT BOARD. SS-49A
106	A-8271-314-B	o	MOUNTED CIRCUIT BOARD. DC-53A
107	A-8271-316-A	o	MOUNTED CIRCUIT BOARD. RP-62A
108	A-8271-317-A	o	MOUNTED CIRCUIT BOARD. VM-12P
109	A-8271-318-A	o	MOUNTED CIRCUIT BOARD. VO-37A
110	A-8271-319-A	o	MOUNTED CIRCUIT BOARD. CR-39
111	A-6756-022-A	o	MOUNTED CIRCUIT BOARD. DR-153
112	X-3166-367-1	s	KNOB ASSY (2P). SW
113	X-3166-368-1	s	KNOB ASSY (3P). SW
114 ⚠	1-450-912-11	s	TRANSFORMER. POWER
115	1-507-743-21	s	JACK. STEREO MINIATURE
116	1-507-854-00	s	JACK. LARGE TYPE
117 ⚠	1-532-203-00	s	FUSE. TIME-LAG 2A 250V
118 ⚠	1-532-237-00	s	FUSE. TIME-LAG 3.15A 250V
119	1-533-189-11	s	HOLDER. FUSE
120 ⚠	1-570-052-11	s	SWITCH. PUSH (AC POWER) (1 KEY)
121	1-572-991-11	s	SWITCH. SLIDE
122	1-572-992-11	s	SWITCH. SLIDE
123	1-572-993-11	s	SWITCH. SLIDE
124	1-641-584-11	o	PRINTED CIRCUIT BOARD. CN-633
125	1-643-689-11	o	PRINTED CIRCUIT BOARD. AC-136
126	3-177-646-01	o	SHIELD (C). VM
127	1-644-095-12	o	PRINTED CIRCUIT BOARD. DUS-544
128	1-690-612-11	o	WIRE. FLEXIBLE CARD 20P
129	1-690-613-11	o	WIRE. FLEXIBLE CARD 26P
130	1-690-614-12	o	WIRE. FLEXIBLE CARD 28P
131	2-335-143-01	o	FILM. INSULATING
132	3-168-157-01	o	BRACKET (R). VO
133	3-168-158-01	o	BRACKET (L). VO
134	3-168-180-01	o	COVER. AC PC BOARD
135	3-173-464-01	o	SHIELD (A). VO
136	3-173-465-01	o	SHIELD (B). VO
137	3-173-466-01	o	SHEET. INSULATING. VM
138	3-173-468-01	o	SHEET. INSULATING. RP
139	3-173-469-01	o	BUSHING. TRANSISTOR
140	3-173-475-03	o	SHEET. INSULATING. KY
141	3-173-476-01	o	SHIELD. V
142	X-3166-801-1	o	SHIELD (B) ASSY. DC
143	3-173-478-01	o	SHIELD (A). DC
144	3-173-480-01	o	HOLDER (B). LED
145	3-173-481-02	o	SHEET. INSULATING. DR
146	3-173-489-01	o	SHIELD (A). VM
147	3-173-490-01	o	SHIELD (B). VM
148	3-173-491-02	o	SHIELD (A). RP
149	3-173-492-01	o	SHIELD (B). RP
150	3-177-256-01	o	COVER. PS
151	3-175-214-01	o	SHIELD. CR
152	3-646-090-11	s	RIVET. NYLON
153	3-682-057-11	s	SPACER (SMALL)
154	3-703-353-08	o	SUPPORTER. PC BOARD
155	4-353-620-02	o	HINGE. PC BOARD
156	4-601-472-00	o	COVER. FUSE
157	4-924-098-31	o	HOLDER. PC BOARD
158	A-8276-478-A	o	MOUNTED CIRCUIT BOARD. DUS-529
159 ⚠	1-570-173-11	s	SWITH. VOLTAGE CHANGE
160	3-175-891-01	o	COVER
161	3-642-310-00	s	HOLDER. PC BOARD
162	4-886-821-11	s	SCREW. M3 CASE

Cassette compartment block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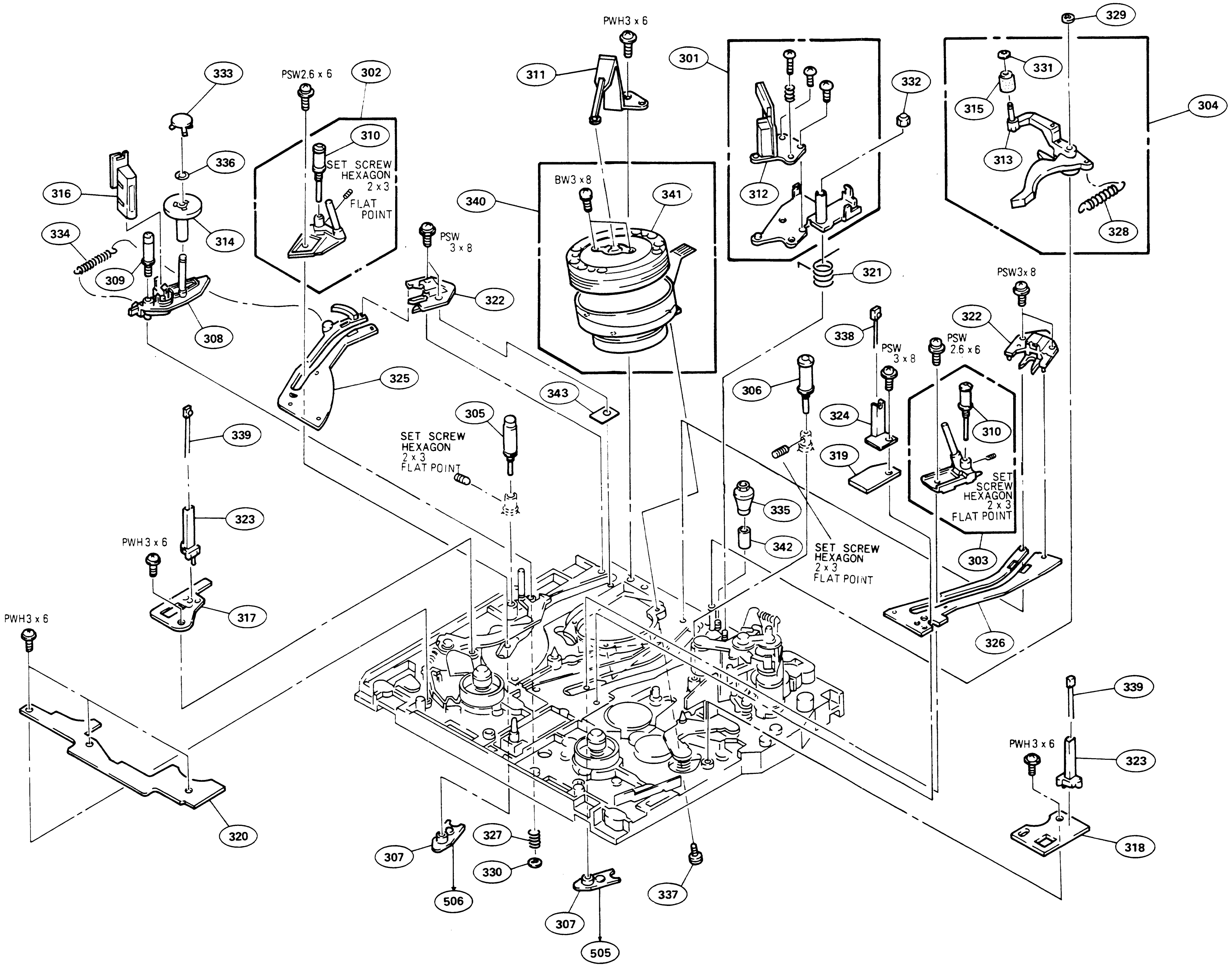
No.	Part No.	SP	Description
201	A-6751-446-A	s	FL BLOCK ASSY
202	3-173-474-11	s	DOOR. FL
203	X-3727-775-2	s	GEAR (RIGHT) ASSY. MIDWAY
204	X-3727-784-1	s	MOTOR ASSY
205	3-168-046-02	s	LEVER. PREVENTION
206	3-696-510-01	s	WASHER (3). STOPPER
207	3-716-144-02	s	RETAINER. WORM
208	3-736-100-01	s	GEAR (FL). WORM
209	3-736-164-01	s	WHEEL (FL). WORM
210	3-736-167-01	s	ARM. DOOR SWITCHING
211	3-738-285-01	s	SPRING. TENSION
212	3-739-687-01	s	SPRING. TENSION

Head drum and tape run blocks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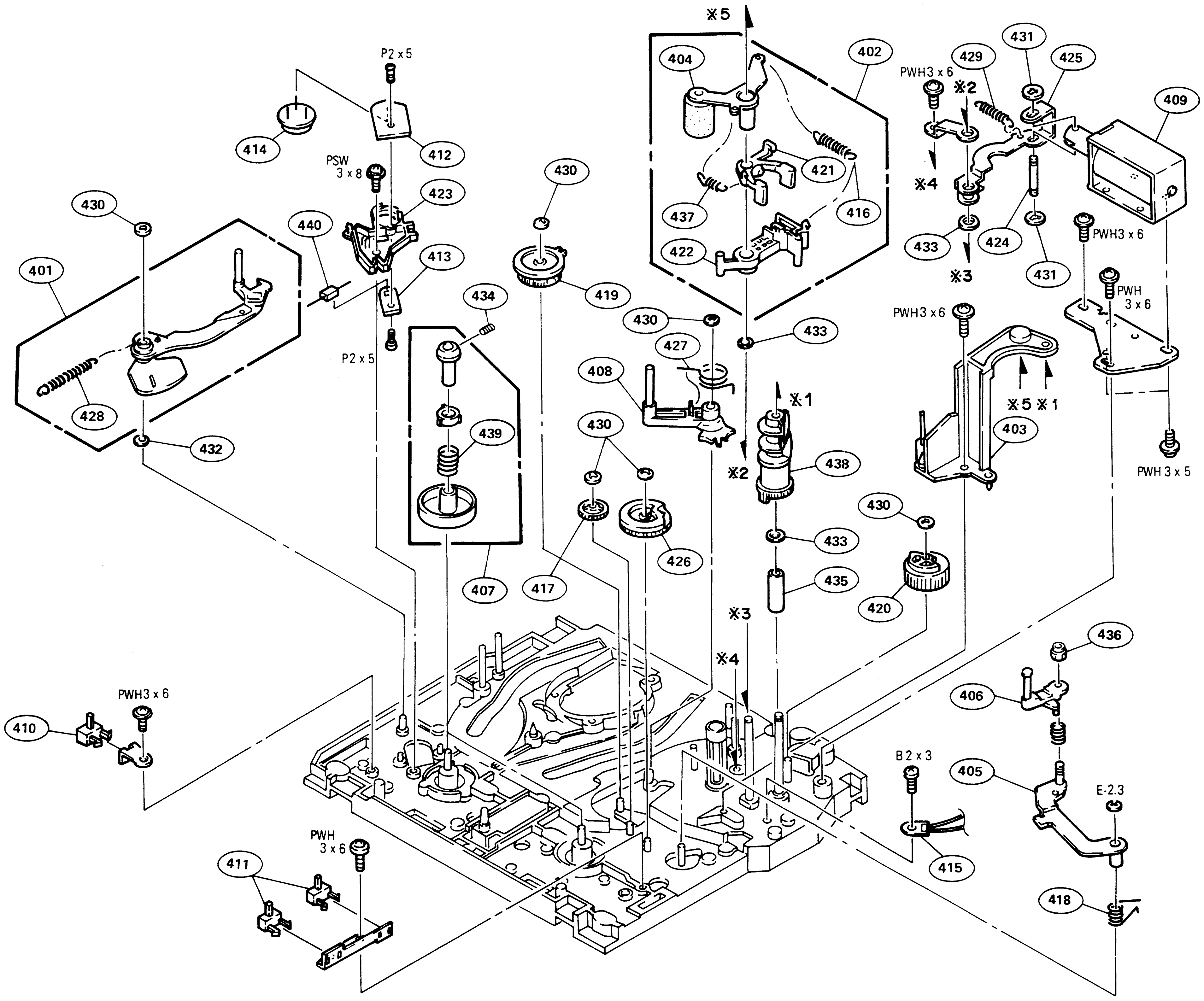
No.	Part No.	SP	Description
301	A-6736-092-A	s	HEAD ASSY. AUDIO
302	A-6746-062-B	s	SHUTTLE (LEFT) BLOCK ASSY
303	A-6746-063-B	s	SHUTTLE (RIGHT) BLOCK ASSY
304	A-6747-277-A	o	ROLLER BLOCK ASSY. BC
305	X-3165-325-2	s	ROLLER ASSY. No.1 GUIDE
306	X-3165-326-2	s	ROLLER ASSY. No.9 GUIDE
307	X-3165-329-1	o	PLATE ASSY. SHUTTLE
308	X-3165-335-1	o	BASE ASSY. STABILIZER
309	X-3165-336-1	s	ROLLER ASSY. No.2 GUIDE
310	X-3165-337-1	s	ROLLER ASSY. GUIDE
311	X-3165-584-1	s	GROUND ASSY. SHAFT
312	X-3165-588-1	o	HEAD ASSY. ACE
313	X-3166-556-1	o	ARM ASSY. MC ROLLER
314	X-3727-771-1	s	STABILIZER ASSY. TAPE
315	X-3743-515-4	s	ROLLER ASSY. C
316	1-543-695-11	s	HEAD. FULL-ERASE
317	1-637-245-13	o	PRINTED CIRCUIT BOARD. SE-151
318	1-637-246-12	o	PRINTED CIRCUIT BOARD. SE-152
319	1-637-247-11	o	PRINTED CIRCUIT BOARD. LE-80
320	1-637-251-12	o	PRINTED CIRCUIT BOARD. HN-160
321	3-166-987-01	s	SPRING. AH COIL
322	3-166-992-02	s	HOLDER. SHUTTLE
323	3-167-013-02	o	HOLDER. ST SENSOR
324	3-167-028-02	o	HOLDER. LED
325	3-167-034-02	s	RAIL (L). SLIDE
326	3-167-035-05	s	RAIL (R). SLIDE
327	3-305-423-00	s	SPRING. COMPRESSION
328	3-669-979-00	s	SPRING. TENSION
329	3-650-537-00	o	WASHER
330	3-669-465-00	s	WASHER (1.5). STOPPER
331	3-669-595-00	s	WASHER (2). STOPPER
332	3-736-041-01	s	NUT (N3). NYLON
333	3-736-082-01	s	RETAINER. TS THRUST
334	3-736-745-01	s	SPRING
335	3-738-250-01	s	SCREW. AC ADJUSTMENT
336	3-741-925-01	s	RING. RETAINING
337	3-899-248-11	s	SCREW (M3x8)
338	8-719-985-00	s	LED GL451VS1. IR
339	8-729-926-31	s	PHOTOTRANSISTOR PT483F1S
340	8-848-578-12	s	DRUM ASSY DZH-41A-R
341	8-848-579-02	s	UPPER DRUM ASSY DZR-41-R
342	3-177-109-01	s	SLEEVE
343	3-675-713-91	s	SPACER. VIDEO HEAD

Reel table and pinch roller blocks



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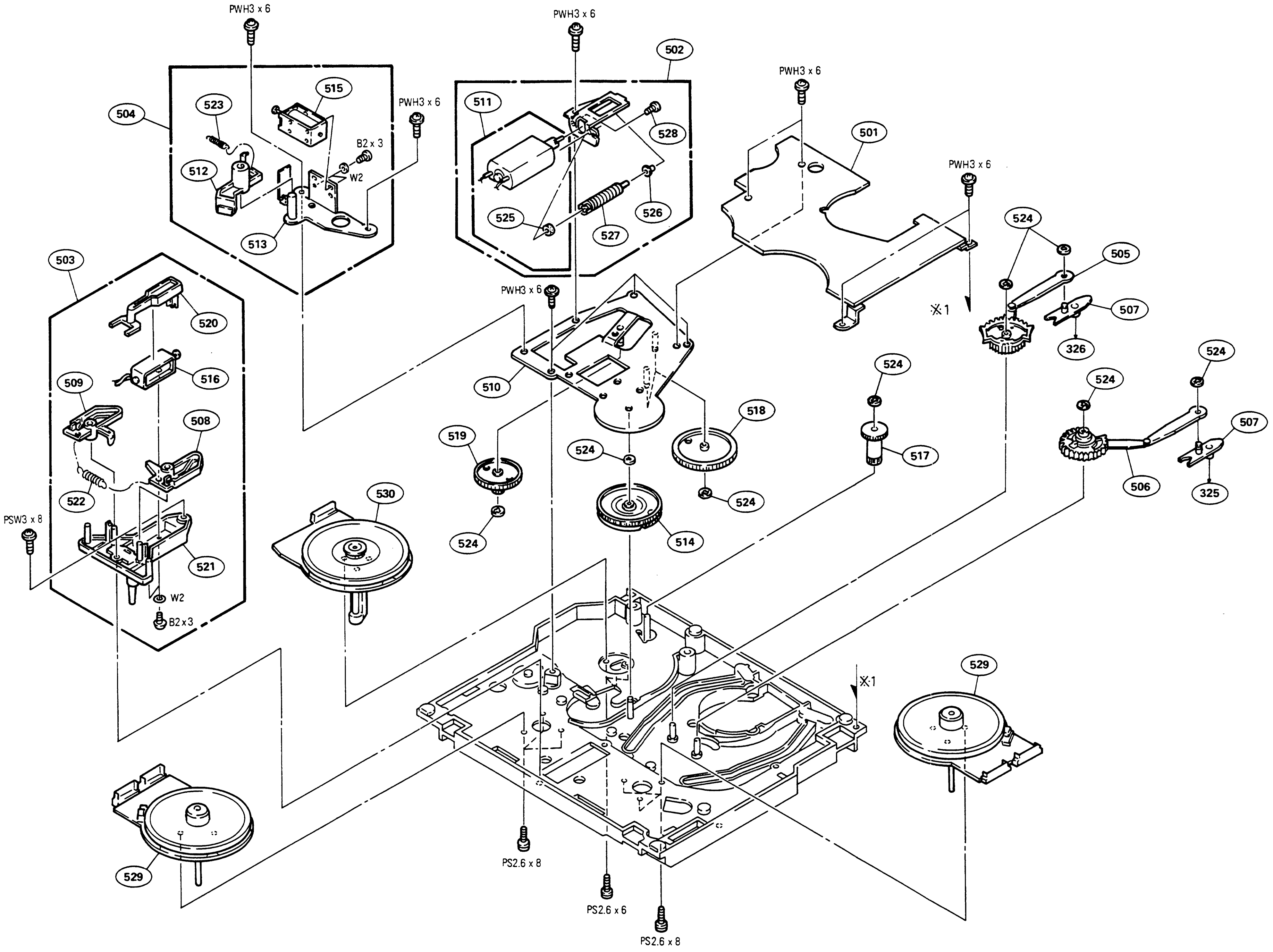
No.	Part No.	SP	Description
401	A-6742-071-A	s	ARM ASSY. TENSION REGULATOR
402	A-6750-279-C	s	PINCH ROLLER BLOCK ASSY
403	X-3166-781-1	o	OPENER ASSY. CASSETTE
404	X-3165-332-2	o	ARM ASSY. PINCH ROLLER
405	X-3165-340-1	o	ARM ASSY. RVS
406	X-3165-341-1	s	BASE ASSY. GUIDE
407	X-3165-345-1	s	TABLE ASSY. REEL
408	X-3166-369-2	s	GEAR ASSY. FR
409	1-454-434-21	s	SOLENOID. PLUNGER
410	1-570-711-11	s	SWITCH. MICRO
411	1-571-099-11	s	SWITCH. MICRO
412	1-637-249-11	o	PRINTED CIRCUIT BOARD. SE-159
413	1-637-250-11	o	PRINTED CIRCUIT BOARD. LE-86
414	1-806-232-21	s	DETECTOR MB-1102/S.N
415	1-806-682-91	s	SENSOR. DEW CONDENSATION
416	3-177-579-01	s	SPRING
417	3-166-989-01	s	GEAR. RVS RELAY
418	3-166-991-01	s	SPRING. RVS COIL
419	3-167-006-01	s	GEAR. FR DRIVING
420	3-167-008-01	s	GEAR. PRESS CAM
421	3-167-011-02	o	CONVEXITY BLOCK
422	3-167-012-02	o	ARM. PRESS LOCK
423	3-167-036-01	o	HOLDER. STD
424	3-174-491-01	o	PIN. SOLENOID
425	3-174-492-01	o	LEVER. PRESS
426	3-174-891-01	s	GEAR (2). RVS CAM
427	3-174-892-01	s	SPRING. FR COIL
428	3-490-159-00	s	SPRING. TENSION
429	3-646-209-11	s	SPRING. M-SW LEVER
430	3-669-596-00	s	WASHER (2.3). STOPPER
431	3-694-792-01	o	WASHER
432	3-701-439-21	s	WASHER. POLY 3MM DIA..0.5t
433	3-701-443-21	s	WASHER. POLY 5MM DIA..0.5t
434	3-701-506-01	s	SET SCREW. DOUBLE POINT 3x4
435	3-703-309-31	s	SPACER (5x18)
436	3-736-041-01	s	NUT (N3). NYLON
437	3-736-046-01	s	SPRING (RETURN). TENSION
438	3-736-136-01	s	CAM. ELEVATOR
439	3-739-621-01	s	SPRING. COMPRESSION
440	8-719-821-22	s	LED TL0221. ORG

Mechanism control block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No.	Part No.	SP	Description
501	A-6715-460-A	o	MOUNTED CIRCUIT BOARD. DR-167
502	A-6737-203-B	s	MOTOR BLOCK ASSY. CAM
503	A-6741-069-A	o	BRAKE BLOCK ASSY. REEL
504	A-6741-070-A	o	BRAKE BLOCK ASSY. LDB
505	A-6750-281-A	s	GEAR (RIGHT) BLOCK ASSY. LOADING
506	A-6750-282-A	s	GEAR (LEFT) BLOCK ASSY. LOADING
507	X-3165-329-1	o	PLATE ASSY. SHUTTLE
508	X-3165-330-3	s	ARM (S) ASSY. BRAKE
509	X-3165-331-2	s	ARM (T) ASSY. BRAKE
510	X-3165-347-2	o	HOLDER ASSY. DRIVING GEAR
511	X-3165-593-2	o	MOTOR ASSY. CAM
512	X-3166-511-1	s	ARM ASSY. LDB
513	X-3166-512-2	o	LDB (BASE) ASSY
514	X-3166-575-1	s	GEAR (2) ASSY. MODE
515	1-454-334-71	s	SOLENOID. PLUNGER
516	1-454-531-11	s	SOLENOID. PLUNGER
517	3-166-988-01	s	GEAR. PINCH COMMUNICATION
518	3-167-001-01	s	GEAR. RELAY
519	3-167-081-01	s	WHEEL. WORM
520	3-167-834-01	o	SLIDER. B
521	3-167-835-01	o	CLAMP. M
522	3-492-141-XX	s	SPRING. TENSION
523	3-176-439-02	s	SPRING. TENSION
524	3-669-596-00	s	WASHER (2.3). STOPPER
525	3-696-388-01	s	RUBBER. JOINT
526	3-716-144-02	s	RETAINER. WORM
527	3-733-395-01	s	GEAR (CAM). WORM
528	7-627-553-28	s	SCREW. PRECISION +P 2x2.5
529	8-835-432-01	s	MOTOR. DC SRV-0201A
530	8-835-480-02	s	MOTOR. DC SCV-0401A

14-3. ELECTRICAL PARTS LIST

AC-136 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-643-689-11	o	PRINTED CIRCUIT BOARD, AC-136
4pcs	1-533-189-11	s	HOLDER, FUSE
1pc	3-168-180-01	o	COVER, AC BOARD
2pcs	3-646-090-11	s	RIVET, NYLON
C1	⚠1-137-107-11	s	FILM 0.047uF 20% 250V
CN1 W	⚠1-564-321-00	o	CONNECTOR, VH 2P, MALE
CN2 W	⚠1-565-395-11	o	CONNECTOR, VH 3P, MALE
CN3 W	⚠1-564-321-00	o	CONNECTOR, VH 2P, MALE
CN4 W	⚠1-580-445-11	o	CONNECTOR, VH 3P, MALE
CN5 W	⚠1-564-687-11	o	CONNECTOR, VH 3P, MALE
F1	⚠1-532-203-00	s	FUSE, TIME-LAG 2A 250V
F2	⚠1-532-203-00	s	FUSE, TIME-LAG 2A 250V
R1	⚠1-214-937-00	s	METAL 1M 1% 1/2W

AH-28 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
CN616 W	1-506-483-21	s	CONNECTOR, 4P, MALE
CN617 Y	1-506-481-11	s	CONNECTOR, 2P, MALE
CN618 W	1-506-481-11	s	CONNECTOR, 2P, MALE
H1001	X-3165-588-1	o	HEAD ASSY, ACE

AU-161A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-313-B	o	MOUNTED CIRCUIT BOARD, AU-161A
C1	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C2	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C3	Deleted.		
*a	1-126-162-11	s	ELECT 3.3uF 20% 50V
C4	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C5	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C6	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C7	1-130-493-00	s	MYLAR 0.068uF 5% 50V
C8	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C11	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C12	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C13	1-163-275-11	s	CERAMIC, CHIP 1000pF 5% 50V
C14	1-123-369-00	s	ELECT 4.7uF 20% 63V
C15	1-123-369-00	s	ELECT 4.7uF 20% 63V
C17	1-124-910-11	s	ELECT 47uF 20% 50V
C18	1-123-369-00	s	ELECT 4.7uF 20% 63V
C19	1-123-369-00	s	ELECT 4.7uF 20% 63V
C20	1-126-160-11	s	ELECT 1uF 20% 50V
C21	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C22	1-124-589-11	s	ELECT 47uF 20% 16V
C23	1-130-475-00	s	MYLAR 2200pF 5% 50V
C24	1-126-163-11	s	ELECT 4.7uF 20% 50V
C25	1-130-487-00	s	MYLAR 0.022uF 5% 50V
C26	1-124-239-00	s	ELECT 6.8uF 20% 25V
C27	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C28	1-124-589-11	s	ELECT 47uF 20% 16V
C29	1-126-157-11	s	ELECT 10uF 20% 16V
C30	1-124-120-11	s	ELECT 220uF 20% 25V
C31	1-124-584-00	s	ELECT 100uF 20% 10V
C33	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C34	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C36	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C38	1-163-275-11	s	CERAMIC, CHIP 1000pF 5% 50V
C39	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C40	1-123-369-00	s	ELECT 4.7uF 20% 63V
C41	1-123-369-00	s	ELECT 4.7uF 20% 63V
C42	1-124-910-11	s	ELECT 47uF 20% 50V
C43	1-123-369-00	s	ELECT 4.7uF 20% 63V
C44	1-123-369-00	s	ELECT 4.7uF 20% 63V
C46	1-130-475-00	s	MYLAR 2200pF 5% 50V
C47	1-126-163-11	s	ELECT 4.7uF 20% 50V
C48	1-130-487-00	s	MYLAR 0.022uF 5% 50V
C49	1-124-239-00	s	ELECT 6.8uF 20% 25V
C50	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C51	1-126-157-11	s	ELECT 10uF 20% 16V
C52	1-124-120-11	s	ELECT 220uF 20% 25V
C53	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C54	1-126-157-11	s	ELECT 10uF 20% 16V
C55	1-126-157-11	s	ELECT 10uF 20% 16V
C56	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C57	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C58	1-124-589-11	s	ELECT 47uF 20% 16V
C59	1-124-589-11	s	ELECT 47uF 20% 16V
C60	1-124-589-11	s	ELECT 47uF 20% 16V
C61	1-124-589-11	s	ELECT 47uF 20% 16V
C66	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C201	1-124-257-00	s	ELECT 2.2uF 20% 50V

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
***b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480**

(AU-161A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C202	1-124-257-00	s	ELECT 2.2uF 20% 50V
C203	1-163-275-11	s	CERAMIC, CHIP 1000pF 5% 50V
C206	1-126-163-11	s	ELECT 4.7uF 20% 50V
C207	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C209	1-124-589-11	s	ELECT 47uF 20% 16V
C211	1-126-160-11	s	ELECT 1uF 20% 50V
C212	1-126-163-11	s	ELECT 4.7uF 20% 50V
C213	1-124-234-00	s	ELECT 22uF 20% 16V
C214	1-124-589-11	s	ELECT 47uF 20% 16V
C215	1-126-163-11	s	ELECT 4.7uF 20% 50V
C216	1-130-477-00	s	MYLAR 3300pF 5% 50V
C217	1-126-163-11	s	ELECT 4.7uF 20% 50V
C220	1-126-157-11	s	ELECT 10uF 20% 16V
C223	1-130-486-00	s	MYLAR 0.018uF 10% 50V
C224	1-130-475-00	s	MYLAR 2200pF 5% 50V
C225	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C226	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C227	1-109-675-11	s	MICA 120pF 1% 500V
C228	1-109-675-11	s	MICA 120pF 1% 500V
*a	1-109-621-00	s	MICA 220pF 1% 500V
C229	1-163-143-00	s	CERAMIC, CHIP 1200pF 5% 50V
C230	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C231	1-126-163-11	s	ELECT 4.7uF 20% 50V
C235	1-126-157-11	s	ELECT 10uF 20% 16V
C236	1-126-163-11	s	ELECT 4.7uF 20% 50V
C238	1-126-160-11	s	ELECT 1uF 20% 50V
C239	1-126-157-11	s	ELECT 10uF 20% 16V
C240	1-107-169-00	s	MICA 100pF 5% 500V
*a	Not in use.		
C303	1-163-275-11	s	CERAMIC, CHIP 1000pF 5% 50V
C306	1-126-163-11	s	ELECT 4.7uF 20% 50V
C307	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C309	1-124-589-11	s	ELECT 47uF 20% 16V
C311	1-126-160-11	s	ELECT 1uF 20% 50V
C312	1-126-163-11	s	ELECT 4.7uF 20% 50V
C313	1-124-234-00	s	ELECT 22uF 20% 16V
C314	1-124-589-11	s	ELECT 47uF 20% 16V
C315	1-126-163-11	s	ELECT 4.7uF 20% 50V
C316	1-130-477-00	s	MYLAR 3300pF 5% 50V
C317	1-126-163-11	s	ELECT 4.7uF 20% 50V
C320	1-126-157-11	s	ELECT 10uF 20% 16V
C323	1-130-486-00	s	MYLAR 0.018uF 10% 50V
C324	1-130-475-00	s	MYLAR 2200pF 5% 50V
C325	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C326	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C327	1-109-675-11	s	MICA 120pF 1% 500V
C328	1-109-675-11	s	MICA 120pF 1% 500V
*a	1-109-621-00	s	MICA 220pF 1% 500V
C329	1-163-143-00	s	CERAMIC, CHIP 1200pF 5% 50V
C330	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C331	1-126-163-11	s	ELECT 4.7uF 20% 50V
C339	1-126-157-11	s	ELECT 10uF 20% 16V
C340	1-107-169-00	s	MICA 100pF 5% 500V
*a	Not in use.		
C402	1-136-558-11	s	FILM 3900pF 5% 630V
C403	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C404	1-130-473-00	s	MYLAR 1500pF 5% 50V
C405	1-124-589-11	s	ELECT 47uF 20% 16V
C406	1-124-234-00	s	ELECT 22uF 20% 16V
*a	Change 10uF -> 22uF.		

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Ref. No. or Q'ty	Part No.	SP	Description
C407	1-124-234-00	s	ELECT 22uF 20% 16V
C414	1-126-157-11	s	ELECT 10uF 20% 16V
C415	1-126-934-11	s	ELECT 220uF 20% 16V
C417	1-126-163-11	s	ELECT 4.7uF 20% 50V
C418	1-126-934-11	s	ELECT 220uF 20% 16V
C420	1-124-465-00	s	ELECT 0.47uF 20% 50V
*a	Not in use.		
CN302 W	1-506-468-11	s	CONNECTOR, 3P, MALE
CN303 R	1-506-468-11	s	CONNECTOR, 3P, MALE
CN307 B	1-506-473-11	s	CONNECTOR, 8P, MALE
CN308 Y	1-506-471-11	s	CONNECTOR, 6P, MALE
CN309 Y	1-506-469-11	s	CONNECTOR, 4P, MALE
CN310 B	1-506-474-11	s	CONNECTOR, 9P, MALE
CN311 Y	1-506-476-11	s	CONNECTOR, 11P, MALE
CN313 R	1-506-472-11	s	CONNECTOR, 7P, MALE
CN314 W	1-506-469-11	s	CONNECTOR, 4P, MALE
CN315 B	1-506-468-11	s	CONNECTOR, 3P, MALE
CN316 Y	1-506-468-11	s	CONNECTOR, 3P, MALE
D2	8-719-104-34	s	DIODE 1S2836
D5	8-719-400-18	s	DIODE MA152WK
D6	8-719-104-34	s	DIODE 1S2836
D7	8-719-109-93	s	DIODE RD6.2ES-B2
D8	8-719-400-18	s	DIODE MA152WK
D9	Deleted.		
*a	8-719-400-18	s	DIODE MA152WK
D201	8-719-400-18	s	DIODE MA152WK
D202	8-719-400-18	s	DIODE MA152WK
D203	8-719-400-18	s	DIODE MA152WK
D204	8-719-911-19	s	DIODE 1SS119
D302	8-719-400-18	s	DIODE MA152WK
D303	8-719-400-18	s	DIODE MA152WK
D403	8-719-109-81	s	DIODE RD4.7ES-B2
D404	8-719-400-18	s	DIODE MA152WK
D405	8-719-110-03	s	DIODE RD7.5ES-B2
*b	Change RD8.2 -> RD7.5.		
D406	8-719-400-18	s	DIODE MA152WK
D409	8-719-400-18	s	DIODE MA152WK
D410	8-719-911-19	s	DIODE 1SS119
D411	8-719-911-19	s	DIODE 1SS119
D414	8-719-110-14	s	DIODE RD9.1ES-B1
FL1	1-236-570-11	s	FILTER, BANDPASS 1.4MHz
FL2	1-236-569-11	s	FILTER, BANDPASS 1.8MHz
FL201	1-239-008-11	s	FILTER, LOW-PASS
FL301	1-239-008-11	s	FILTER, LOW-PASS
IC1	8-759-420-15	s	IC AN3932S
IC2	8-759-420-18	s	IC AN3972FC
IC3	8-759-982-03	s	IC RC5532DD
IC4	8-759-602-49	s	IC M5201P
IC5	8-759-035-93	s	IC SC7S32F
*a	Not in use.		
IC201	8-759-805-20	s	IC LA7297
IC203	8-759-602-49	s	IC M5201P
IC204	8-759-602-49	s	IC M5201P
IC301	8-759-805-20	s	IC LA7297
IC303	8-759-602-49	s	IC M5201P
IC304	8-759-602-49	s	IC M5201P
IC401	8-759-982-25	s	IC RC78L09A

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

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Ref. No. or Q'ty	Part No.	SP	Description
L2	1-408-408-00	s	INDUCTOR 8.2uH
L3	1-410-482-31	s	INDUCTOR 100uH
L4	1-408-408-00	s	INDUCTOR 8.2uH
L201	1-410-088-11	s	INDUCTOR 12mH
L202	1-410-091-31	s	INDUCTOR 22mH
L301	1-410-088-11	s	INDUCTOR 12mH
L302	1-410-091-31	s	INDUCTOR 22mH
L401	1-410-120-11	s	INDUCTOR 1.2mH
Q5	8-729-901-06	s	TRANSISTOR DTA144EK
Q8	8-729-901-06	s	TRANSISTOR DTA144EK
Q10	8-729-119-77	s	TRANSISTOR 2SA1175-FEK
Q12	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q13	8-729-901-01	s	TRANSISTOR DTC144EK
Q14	8-729-202-38	s	TRANSISTOR 2SC3326N
Q15	8-729-202-38	s	TRANSISTOR 2SC3326N
Q201	8-729-901-01	s	TRANSISTOR DTC144EK
Q203	8-729-901-01	s	TRANSISTOR DTC144EK
Q207	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q211	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q212	8-729-901-06	s	TRANSISTOR DTA144EK
Q213	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q303	8-729-901-01	s	TRANSISTOR DTC144EK
Q307	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q312	8-729-202-38	s	TRANSISTOR 2SC3326N
Q313	8-729-901-06	s	TRANSISTOR DTA144EK
Q314	8-729-901-01	s	TRANSISTOR DTC144EK
Q403	8-729-140-96	s	TRANSISTOR 2SD774-34
Q404	8-729-901-01	s	TRANSISTOR DTC144EK
Q406	8-729-320-60	s	TRANSISTOR 2SD788-34
Q407	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q408	8-729-140-93	s	TRANSISTOR 2SB739-34
Q409	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q414	8-729-901-01	s	TRANSISTOR DTC144EK
Q416	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q422	8-729-901-06	s	TRANSISTOR DTA144EK
R1	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R2	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R3	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R5	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R6	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R7	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R8	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R9	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R10	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R11	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R12	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R13	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W
R14	1-216-691-11	s	METAL, CHIP 47K 0.5% 1/10W
R15	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R16	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R17	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R23	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R24	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R25	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R29	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R30	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R31	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R32	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R33	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R36	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R41	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R42	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R43	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R44	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R46	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R47	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R48	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R49	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R50	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R51	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R52	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R58	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R59	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R60	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R64	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R65	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R66	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R67	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R68	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R69	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R70	1-216-063-00	s	METAL, CHIP 3.9K 5% 1/10W
R71	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R72	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R73	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R74	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R77	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R81	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R82	1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W
R83	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R84	1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W
R88	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R89	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R90	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
*a	Not in use.		
R201	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R202	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R203	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R204	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R206	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R207	1-216-001-00	s	METAL, CHIP 10 5% 1/10W
R208	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R209	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R211	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R213	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R214	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R217	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R218	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R219	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R221	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R222	1-216-666-11	s	METAL, CHIP 4.3K 0.5% 1/10W
R223	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
*b	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R229	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R232	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R235	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R236	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R237	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W

NOTES: *a; S/N 10001 thru 10030   *c; S/N 10001 thru 10280   *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130   *d; S/N 10001 thru 10480

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Ref. No. or Q'ty	Part No.	SP	Description
R238	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R239	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R251	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R252	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R261	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R262	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R263	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R267	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R268	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R269	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R271	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R272	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R273	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R274	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R275	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R277	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R278	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R279	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R280	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R281	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R282	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R285	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R286	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
*b	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R287	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R288	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
*a	Not in use.		
R306	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R307	1-216-001-00	s	METAL, CHIP 10 5% 1/10W
R308	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R309	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R311	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R313	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R314	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R317	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R318	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R319	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R321	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R322	1-216-666-11	s	METAL, CHIP 4.3K 0.5% 1/10W
R323	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
*b	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R329	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R332	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R335	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R336	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R337	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R338	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R339	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R350	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R351	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R361	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R362	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R363	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R367	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R368	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R369	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R371	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R372	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R373	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W

(AU-161A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R374	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
*b	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R375	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
*b	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R377	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R378	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R379	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R380	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R381	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R382	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R383	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R384	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R385	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R386	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
*b	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R387	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R402	1-249-381-11	s	CARBON 1 5% 1/4W
R403	1-216-298-00	s	METAL, CHIP 2.2 5% 1/10W
R407	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R408	1-216-304-11	s	METAL, CHIP 3.3 5% 1/10W
R411	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R412	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R413	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R414	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R415	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R416	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R417	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R418	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R419	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R429	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R430	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R432	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R433	1-249-407-11	s	CARBON 150 5% 1/4W
R434	1-216-017-00	s	METAL, CHIP 47 5% 1/10W
RV1	1-238-020-11	s	RES, ADJ, CARBON 100K
RV2	1-238-019-11	s	RES, ADJ, CARBON 47K
RV3	1-230-522-11	s	RES, ADJ, METAL 4.7K
RV4	1-238-015-11	s	RES, ADJ, CARBON 4.7K
RV5	1-238-015-11	s	RES, ADJ, CARBON 4.7K
RV6	1-238-019-11	s	RES, ADJ, CARBON 47K
RV7	1-230-522-11	s	RES, ADJ, METAL 4.7K
RV8	1-238-015-11	s	RES, ADJ, CARBON 4.7K
RV9	1-238-015-11	s	RES, ADJ, CARBON 4.7K
RV10	1-238-016-11	s	RES, ADJ, CARBON 10K
RV11	1-238-016-11	s	RES, ADJ, CARBON 10K
RV201	1-238-017-11	s	RES, ADJ, CARBON 22K
RV202	1-238-019-11	s	RES, ADJ, CARBON 47K
RV203	1-238-015-11	s	RES, ADJ, CARBON 4.7K
RV204	1-238-013-11	s	RES, ADJ, CARBON 2.2K
RV205	1-238-021-11	s	RES, ADJ, CARBON 220K
RV301	1-238-017-11	s	RES, ADJ, CARBON 22K
RV302	1-238-019-11	s	RES, ADJ, CARBON 47K
RV303	1-238-015-11	s	RES, ADJ, CARBON 4.7K
RV304	1-238-013-11	s	RES, ADJ, CARBON 2.2K
RV305	1-238-021-11	s	RES, ADJ, CARBON 220K
T401	1-433-330-11	s	TRANSFORMER, BIAS OSCILLATION

NOTES: *a; S/N 10001 thru 10030
*b; S/N 10001 thru 10130
*c; S/N 10001 thru 10280
*d; S/N 10001 thru 10480
*e; S/N 10131 thru 10280

CM-14 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
CN001 Y	1-506-482-11	s	CONNECTOR, 3P, MALE

CN-633 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-641-584-11	o	PRINTED CIRCUIT BOARD, CN-633
C1	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
CN1 W	------------	-	HARNESS (CN-KY)
CN2 W	1-506-483-21	s	CONNECTOR, 4P, MALE
CN001	1-507-743-21	s	JACK, MINI (STEREO)
CN002	1-507-743-21	s	JACK, MINI (STEREO)
CN003	1-507-854-00	s	JACK, PHONE

CP-183 BOARD

This board includes the DUS-442 board.

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-6756-339-A	o	MOUNTED CIRCUIT BOARD, CP-183
C1	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C2	1-124-589-11	s	ELECT 47uF 20% 16V
C3	1-124-589-11	s	ELECT 47uF 20% 16V
C4	1-124-589-11	s	ELECT 47uF 20% 16V
C5	1-124-584-00	s	ELECT 100uF 20% 10V
C6	1-124-589-11	s	ELECT 47uF 20% 16V
C7	1-126-163-11	s	ELECT 4.7uF 20% 50V
C8	1-126-163-11	s	ELECT 4.7uF 20% 50V
C10	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C11	1-124-589-11	s	ELECT 47uF 20% 16V
C12	1-124-589-11	s	ELECT 47uF 20% 16V
C13	1-124-589-11	s	ELECT 47uF 20% 16V
C14	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C15	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C16	1-124-584-00	s	ELECT 100uF 20% 10V
CN001	1-573-580-11	s	CONNECTOR, DUAL BNC, FEMALE
CN002	1-573-590-12	s	CONNECTOR, ROUND 4P, FEMALE
CN003	1-573-590-12	s	CONNECTOR, ROUND 4P, FEMALE
CN004	1-573-744-11	s	JACK, PIN 2P, FEMALE
CN005	1-573-590-12	s	CONNECTOR, ROUND 4P, FEMALE
CN006	1-573-744-11	s	JACK, PIN 2P, FEMALE
CN007	1-691-273-11	s	JACK, PIN 1P, FEMALE
CN008	1-691-274-11	s	CONNECTOR, BNC, FEMALE
CN501 Y	1-506-483-21	o	CONNECTOR, 4P, MALE
CN502 B	1-506-488-11	o	CONNECTOR, 9P, MALE
CN503 W	1-506-487-11	s	CONNECTOR, 8P, MALE
CN504 Y	1-506-484-11	s	CONNECTOR, 5P, MALE
CN505 B	1-506-487-11	s	CONNECTOR, 8P, MALE
CN506 B	1-566-095-11	o	PIN, BOARD TO BOARD 11P (used 7P, cut 4P off)
D1	8-719-800-76	s	DIODE 1SS226
D2	8-719-800-76	s	DIODE 1SS226
D3	8-719-800-76	s	DIODE 1SS226
D4	8-719-800-76	s	DIODE 1SS226
D5	8-719-800-76	s	DIODE 1SS226
D11	8-719-157-33	s	DIODE RD6.2MB
D12	8-719-800-76	s	DIODE 1SS226
IC1	8-759-208-09	s	IC TC4052BFHB
IC2	8-759-982-04	s	IC RC5532M
IC3	8-759-710-86	s	IC NJM2233BM
L1	1-410-482-31	s	INDUCTOR 100uH
Q1	8-729-901-01	s	TRANSISTOR DTC144EK
Q2	8-729-901-01	s	TRANSISTOR DTC144EK
Q3	8-729-901-01	s	TRANSISTOR DTC144EK
Q4	8-729-901-01	s	TRANSISTOR DTC144EK
Q5	8-729-202-38	s	TRANSISTOR 2SC3326N
Q6	8-729-202-38	s	TRANSISTOR 2SC3326N
Q7	8-729-202-38	s	TRANSISTOR 2SC3326N
Q8	8-729-202-38	s	TRANSISTOR 2SC3326N
R2	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R3	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R4	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R5	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R6	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(CP-183 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R7	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R8	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R9	1-216-664-11	s	METAL, CHIP 3.6K 0.5% 1/10W
R10	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R11	1-216-664-11	s	METAL, CHIP 3.6K 0.5% 1/10W
R12	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R13	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R14	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R15	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R16	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R17	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R18	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R19	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R20	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R21	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R22	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R23	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R25	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R26	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R27	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R28	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
RJ1	1-216-295-00	s	METAL, CHIP 0
RJ2	1-216-295-00	s	METAL, CHIP 0
RJ3	1-216-295-00	s	METAL, CHIP 0
RJ4	1-216-295-00	s	METAL, CHIP 0
S1	1-570-145-11	s	SWITCH, SLIDE
S2	1-570-145-11	s	SWITCH, SLIDE

CR-39 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-319-A	o	MOUNTED CIRCUIT BOARD, CR-39
C501	1-124-589-11	s	ELECT 47uF 20% 16V
C502	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C503	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C504	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C505	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C506	1-126-162-11	s	ELECT 3.3uF 20% 50V
C507	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C508	1-126-162-11	s	ELECT 3.3uF 20% 50V
C509	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C510	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C511	1-126-162-11	s	ELECT 3.3uF 20% 50V
C512	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C513	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C514	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C515	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C516	1-163-110-00	s	CERAMIC, CHIP 51pF 5% 50V
C517	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C518	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C519	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C520	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C521	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C522	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C523	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C524	1-163-224-11	s	CERAMIC, CHIP 7pF 50V
C525	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C526	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C527	1-126-301-11	s	ELECT 1uF 20% 50V
C528	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C529	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C530	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C531	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C532	1-163-224-11	s	CERAMIC, CHIP 7pF 50V
C533	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C534	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C535	1-163-224-11	s	CERAMIC, CHIP 7pF 50V
C536	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C537	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C538	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C539	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C540	1-126-301-11	s	ELECT 1uF 20% 50V
C541	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C542	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C543	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C544	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C545	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C546	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C547	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C554	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C555	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C601	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C602	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C604	1-163-220-11	s	CERAMIC, CHIP 3pF 50V
C605	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C606	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C607	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C608	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C609	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

Ref. No. or Q'ty	Part No.	SP	Description
C610	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C611	1-163-257-11	s	CERAMIC, CHIP 180pF 5% 50V
C612	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C613	1-163-089-00	s	CERAMIC, CHIP 6pF 50V
C614	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C615	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C616	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C625	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C626	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C627	1-131-377-00	s	TANTALUM 10uF 10% 10V
C628	1-164-492-11	s	CERAMIC, CHIP 0.15uF 10% 16V
*b	Change 0.1uF -> 0.15uF.		
C629	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C630	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C631	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C633	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C634	1-163-114-00	s	CERAMIC, CHIP 75pF 5% 50V
C635	1-163-124-00	s	CERAMIC, CHIP 200pF 5% 50V
C636	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
*a	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C637	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C638	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C639	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C640	1-126-101-11	s	ELECT 100uF 20% 16V
C641	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C642	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C643	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C644	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C645	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C646	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C647	1-164-222-11	s	CERAMIC, CHIP 0.22uF 25V
C648	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C649	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C651	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C652	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C653	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C654	1-131-349-00	s	TANTALUM 2.2uF 10% 35V
C655	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
*a	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C656	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C657	1-126-176-11	s	ELECT 220uF 20% 10V
C658	1-163-222-11	s	CERAMIC, CHIP 5pF 50V
C659	1-163-275-11	s	CERAMIC, CHIP 1000pF 5% 50V
C660	1-124-463-00	s	ELECT 0.1uF 20% 50V
C661	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C662	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C663A	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
*a	Not in use.		
C664	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C665	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V
C666	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C667	1-163-253-11	s	CERAMIC, CHIP 120pF 5% 50V
C670	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C671	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C675	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C676	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C677	1-131-351-00	s	TANTALUM 4.7uF 10% 35V
C678	1-131-347-00	s	TANTALUM 1uF 10% 35V
C679	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V

Ref. No. or Q'ty	Part No.	SP	Description
C687	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C688	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C689	1-124-589-11	s	ELECT 47uF 20% 16V
C690	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C691	1-163-134-00	s	CERAMIC, CHIP 510pF 5% 50V
C692	1-126-101-11	s	ELECT 100uF 20% 16V
C693	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C694	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C695	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C697	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C701	1-163-222-11	s	CERAMIC, CHIP 5pF 50V
C702	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C703	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
*a	1-163-230-11	s	CERAMIC, CHIP 13pF 5% 50V
C704	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C712	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C713	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C715	1-124-589-11	s	ELECT 47uF 20% 16V
C716	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C717	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C718	1-124-589-11	s	ELECT 47uF 20% 16V
C720	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C725A	1-107-085-00	s	MICA 100pF 5% 50V
*a	Not in use.		
C801	1-124-589-11	s	ELECT 47uF 20% 16V
C802	1-163-113-00	s	CERAMIC, CHIP 68pF 5% 50V
C803	1-163-127-00	s	CERAMIC, CHIP 270pF 5% 50V
C804	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C805	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C806	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C807	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C808	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C809	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C810	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C811	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C812	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C813	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C814	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C815	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C816	1-126-176-11	s	ELECT 220uF 20% 10V
C817	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C818	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C819	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C820	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C821	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C822	1-163-139-00	s	CERAMIC, CHIP 820pF 5% 50V
C823	1-163-099-00	s	CERAMIC, CHIP 18pF 5% 50V
C824	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C825	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C826	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C828	1-163-115-00	s	CERAMIC, CHIP 82pF 5% 50V
C829	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C830	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C831	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C832	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C833	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C834	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C835	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C836	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

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Ref. No. or Q'ty	Part No.	SP	Description
C837	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C838	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C840	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C841	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C842	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C843	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C844	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C845	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C911	1-126-101-11	s	ELECT 100uF 20% 16V
C912	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C913	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C914	1-124-589-11	s	ELECT 47uF 20% 16V
C915	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C916	1-124-589-11	s	ELECT 47uF 20% 16V
C917	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C918	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C919	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C920	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C921	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C922	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C923	1-163-275-11	s	CERAMIC, CHIP 1000pF 5% 50V
C924	1-130-489-00	s	MYLAR 0.033uF 5% 50V
C926	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C927	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C928	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C929	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C930	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C931	1-163-131-00	s	CERAMIC, CHIP 390pF 5% 50V
CN212 W	1-562-686-11	o	CONNECTOR, FPC 26P, FEMALE
CN213 B	1-506-482-11	s	CONNECTOR, 3P, MALE
CV601	1-141-276-00	s	CAP, TRIMMER 20pF
CV602	1-141-365-11	s	CAP, TRIMMER 50pF
CV603	1-141-365-11	s	CAP, TRIMMER 50pF
CV800	1-141-276-00	s	CAP, TRIMMER 20pF
CV801	1-141-365-11	s	CAP, TRIMMER 50pF
CV802	1-141-365-11	s	CAP, TRIMMER 50pF
D501	8-719-400-18	s	DIODE MA152WK
D601A	8-719-104-10	s	DIODE 1SS99
*a	Not in use.		
D602A	8-719-104-10	s	DIODE 1SS99
*a	Not in use.		
D801	8-719-800-76	s	DIODE 1SS226
D802	8-719-400-18	s	DIODE MA152WK
D803	8-719-400-18	s	DIODE MA152WK
D804	8-719-800-76	s	DIODE 1SS226
D805	8-719-400-18	s	DIODE MA152WK
FL601	1-236-835-11	s	FILTER, BANDPASS 4.43MHz (REC C)
FL602	1-235-437-11	s	FILTER, BANDPASS 4.43MHz (PB C)
FL604	1-231-280-00	s	FILTER, CERAMIC 4.43MHz
FL605	1-239-325-11	s	FILTER, BANDPASS 5.06MHz
IC501	8-752-333-24	s	IC CXL1506M
IC601	8-759-710-86	s	IC NJM2233BM
IC603	8-759-634-93	s	IC M52059AFP
IC604	8-759-201-47	s	IC TA7357AP
IC608	8-759-710-86	s	IC NJM2233BM
IC901	8-759-982-10	s	IC RC7809FA
IC902	8-759-710-86	s	IC NJM2233BM

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Ref. No. or Q'ty	Part No.	SP	Description
JW601	1-217-666-31	s	RES, SHORTING 0.01 1/6W
L501	1-410-482-31	s	INDUCTOR 100uH
L502	1-410-470-11	s	INDUCTOR 10uH
L503	1-410-478-11	s	INDUCTOR 47uH
L504	1-408-414-00	s	INDUCTOR 27uH
L505	1-408-413-00	s	INDUCTOR 22uH
L506	1-408-413-00	s	INDUCTOR 22uH
L507	1-408-414-00	s	INDUCTOR 27uH
L508	1-408-414-00	s	INDUCTOR 27uH
L509	1-408-414-00	s	INDUCTOR 27uH
L510	1-408-413-00	s	INDUCTOR 22uH
L511	1-408-414-00	s	INDUCTOR 27uH
L512	1-410-470-11	s	INDUCTOR 10uH
L513	1-408-413-00	s	INDUCTOR 22uH
L514	1-408-414-00	s	INDUCTOR 27uH
L601	1-410-482-31	s	INDUCTOR 100uH
L602	1-408-411-00	s	INDUCTOR 15uH
L603	1-408-424-00	s	INDUCTOR 180uH
L604	1-410-476-11	s	INDUCTOR 33uH
L605	1-410-482-31	s	INDUCTOR 100uH
L606	1-408-425-00	s	INDUCTOR 220uH
L610	1-410-476-11	s	INDUCTOR 33uH
L611	1-408-420-00	s	INDUCTOR 82uH
L612	1-408-424-00	s	INDUCTOR 180uH
L613	1-410-476-11	s	INDUCTOR 33uH
L615	1-410-478-11	s	INDUCTOR 47uH
L618	1-410-482-31	s	INDUCTOR 100uH
L619	1-410-482-31	s	INDUCTOR 100uH
L620	1-410-482-31	s	INDUCTOR 100uH
L801	1-408-419-00	s	INDUCTOR 68uH
L802	1-408-422-00	s	INDUCTOR 120uH
L803	1-408-413-00	s	INDUCTOR 22uH
L804	1-408-420-00	s	INDUCTOR 82uH
L805	1-410-473-11	s	INDUCTOR 18uH
L806	1-410-471-11	s	INDUCTOR 12uH
L807	1-408-411-00	s	INDUCTOR 15uH
L808	1-408-411-00	s	INDUCTOR 15uH
L809	1-408-427-00	s	INDUCTOR 330uH
PS101	⚠1-532-605-00	s	LINK, IC 0.4A
Q501	8-729-901-01	s	TRANSISTOR DTC144EK
Q502	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q503	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q504	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q505	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q507	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q508	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q509	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q510	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q511	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q512	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q513	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q514	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q515	8-729-903-10	s	TRANSISTOR FMW1
Q516	8-729-903-97	s	TRANSISTOR FMS1FE
Q517	8-729-903-97	s	TRANSISTOR FMS1FE
Q518	8-729-903-10	s	TRANSISTOR FMW1
Q519	8-729-907-46	s	TRANSISTOR IMZ1

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

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Ref. No. or Q'ty	Part No.	SP	Description
Q520	8-729-903-10	s	TRANSISTOR FMW1
Q521	8-729-903-97	s	TRANSISTOR FMS1FE
Q522	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q523	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q524	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q525	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q526	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q527	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q528	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q529	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q530	8-729-903-97	s	TRANSISTOR FMS1FE
Q531	8-729-903-10	s	TRANSISTOR FMW1
Q532	8-729-903-97	s	TRANSISTOR FMS1FE
Q533	8-729-903-10	s	TRANSISTOR FMW1
Q534	8-729-907-46	s	TRANSISTOR IMZ1
Q535	8-729-903-10	s	TRANSISTOR FMW1
Q536	8-729-903-97	s	TRANSISTOR FMS1FE
Q537	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q538	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q539	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q540	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q541	8-729-901-01	s	TRANSISTOR DTC144EK
Q601	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q602	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q603	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q604	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q605	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q606	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q607	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q610	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q611	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q612	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q613	8-729-901-01	s	TRANSISTOR DTC144EK
Q614	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q615	8-729-901-01	s	TRANSISTOR DTC144EK
Q616	8-729-901-01	s	TRANSISTOR DTC144EK
Q617	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q618	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q619	8-729-901-01	s	TRANSISTOR DTC144EK
Q620	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q621	8-729-202-38	s	TRANSISTOR 2SC3326N
Q622	8-729-901-01	s	TRANSISTOR DTC144EK
Q623	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q629	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q630	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q631	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q637	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q638	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q639	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q640	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q641	8-729-901-01	s	TRANSISTOR DTC144EK
Q801	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q802	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q803	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q804	8-729-907-26	s	TRANSISTOR IMX1
Q805	8-729-903-10	s	TRANSISTOR FMW1
Q806	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q807	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q808	8-729-230-49	s	TRANSISTOR 2SC2712-YG

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Ref. No. or Q'ty	Part No.	SP	Description
Q809	8-729-903-97	s	TRANSISTOR FMS1FE
Q810	8-729-903-10	s	TRANSISTOR FMW1
Q811	8-729-903-97	s	TRANSISTOR FMS1FE
Q812	8-729-903-10	s	TRANSISTOR FMW1
Q813	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q814	8-729-907-26	s	TRANSISTOR IMX1
Q815	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q816	8-729-903-10	s	TRANSISTOR FMW1
Q817	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q818	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q819	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q820	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q821	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q822	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q823	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q824	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q825	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q826	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q827	8-729-907-26	s	TRANSISTOR IMX1
Q828	8-729-907-26	s	TRANSISTOR IMX1
Q829	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q830	8-729-907-26	s	TRANSISTOR IMX1
Q831	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q832	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q833	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q834	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q835	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q836	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q837	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q838	8-729-903-10	s	TRANSISTOR FMW1
R501	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R502	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R503	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R504	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R505	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R506	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R507	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R508	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R509	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R510	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R513	1-216-027-00	s	METAL, CHIP 120 5% 1/10W
R514	1-216-095-00	s	METAL, CHIP 82K 5% 1/10W
R515	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R516	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R517	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R519	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R520	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R521	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R522	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R523	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R524	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R525	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R526	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R527	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R528	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R529	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R530	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R531	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R532	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W

NOTES: *a; S/N 10001 thru 10030
*b; S/N 10001 thru 10130
*c; S/N 10001 thru 10280
*d; S/N 10001 thru 10480
*e; S/N 10131 thru 10280

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Ref. No. or Q'ty	Part No.	SP	Description
R533	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R534	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R535	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R536	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R537	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R538	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R539	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R540	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R541	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R542	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R543	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R544	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R545	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R546	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R547	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R548	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R549	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R550	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R551	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R552	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R553	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R554	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R555	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R556	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R557	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R558	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R559	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R560	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R561	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R562	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R563	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R564	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R565	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R566	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R567	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R568	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R569	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R570	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R571	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R572	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R573	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R574	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R575	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R576	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R577	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R578	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R579	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R580	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R581	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R582	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R583	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R584	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R585	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R586	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R587	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R588	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R589	1-216-009-00	s	METAL, CHIP 22 5% 1/10W
R590	1-216-650-11	s	METAL, CHIP 910 0.5% 1/10W
R591	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R592	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R593	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R594	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R595	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R596	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R597	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R598	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R599	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R601	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R602	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R603	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R604	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R605	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R606	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R607	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R608	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R609	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R610	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R611	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R612	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R613	1-216-295-00	s	METAL, CHIP 0
R614	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R615	1-216-644-11	s	METAL, CHIP 510 0.5% 1/10W
R616	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R617	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R618	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R619	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R620	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R621	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R622	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R623	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
*a	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R624	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R625	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R626A	1-249-423-11	s	CARBON 3.3K 5% 1/4W
*a	Not in use.		
R627A	1-249-429-11	s	CARBON 10K 5% 1/4W
*a	Not in use.		
R640	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R641	1-216-063-00	s	METAL, CHIP 3.9K 5% 1/10W
R642	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R643	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R644	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R645A	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
*f	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
*a	Not in use.		
R646	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R647	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
*a	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R648	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
*f	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
*a	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R649A	1-215-445-00	s	METAL 10K 1% 1/6W
*a	Not in use.		
R650	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R651	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R652	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R653	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R654	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W

NOTES: *a; S/N 10001 thru 10030   *c; S/N 10001 thru 10280   *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130   *d; S/N 10001 thru 10480   *f; S/N 10031 thru 10480

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Ref. No. or Q'ty	Part No.	SP	Description
R655	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R656	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R657	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R658	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R659	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R660	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R661	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R663	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R664	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R665	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R666	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R667	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R668	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R669	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R670	1-216-063-00	s	METAL, CHIP 3.9K 5% 1/10W
R671	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R672	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R673	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R674	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R675	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R676	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R677	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
*a	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R678	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R679	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W
*a	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R680	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R681	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
*a	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R682	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R683	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R684	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R685	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R686	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R687	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R688	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R689	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R690	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R691A	1-216-295-00	s	METAL, CHIP 0
R693	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
*a	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R694	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R695	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
*a	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R696	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R697	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R698	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R699	1-216-649-11	s	METAL, CHIP 820 0.5% 1/10W
R700	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R701	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R723	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R724	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R725	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R731	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R732	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R733	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R734	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R735	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R738	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R801	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R802	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R803	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R804	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R805	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R806	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R807	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R808	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R809	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R810	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R811	1-216-633-11	s	METAL, CHIP 180 0.5% 1/10W
R812	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R813	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R814	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R815	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R816	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R817	1-216-681-11	s	METAL, CHIP 18K 0.5% 1/10W
R818	1-216-669-11	s	METAL, CHIP 5.6K 0.5% 1/10W
R819	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R820	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R821	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R822	1-216-633-11	s	METAL, CHIP 180 0.5% 1/10W
R823	1-216-669-11	s	METAL, CHIP 5.6K 0.5% 1/10W
R824	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R825	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R826	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R827	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R828	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R829	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R830	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R831	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R832	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R833	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R834	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R835	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R836	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R837	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R838	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R839	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R840	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R841	1-216-631-11	s	METAL, CHIP 150 0.5% 1/10W
R842	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R843	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R844	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R845	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R846	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R847	1-216-625-11	s	METAL, CHIP 82 0.5% 1/10W
R848	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R849	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R850	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R851	1-216-633-11	s	METAL, CHIP 180 0.5% 1/10W
R852	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R853	1-216-669-11	s	METAL, CHIP 5.6K 0.5% 1/10W
R854	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R855	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R856	1-216-687-11	s	METAL, CHIP 33K 0.5% 1/10W
R857	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R858	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R859	1-216-025-00	s	METAL, CHIP 100 5% 1/10W

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(CR-39 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R860	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R861	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R862	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R863	1-216-633-11	s	METAL, CHIP 180 0.5% 1/10W
R864	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R865	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R866	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R867	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R868	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R869	1-216-640-11	s	METAL, CHIP 360 0.5% 1/10W
R870	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R871	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R872	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R873	1-216-640-11	s	METAL, CHIP 360 0.5% 1/10W
R874	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R875	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R876	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R877	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R878	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R879	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R880	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R881	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R882	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R883	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R884	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R885	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R886	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R887	1-216-637-11	s	METAL, CHIP 270 0.5% 1/10W
R888	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R889	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R890	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R891	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R892	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R893	1-216-641-11	s	METAL, CHIP 390 0.5% 1/10W
R894	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R895	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R896	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R897	1-216-649-11	s	METAL, CHIP 820 0.5% 1/10W
R898	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R899	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R900	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R901	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R902	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R903	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R904	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R905	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R906	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R907	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R931	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R935	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R936	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R937	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R938	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R939	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R941	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R942	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R943	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R944	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R945	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W

(CR-39 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R946	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R949	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R950	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R951	1-216-100-00	s	METAL, CHIP 130K 5% 1/10W
R952	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R953	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R954	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R955	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R956	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R957	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R958	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R959	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R960	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R961	1-216-638-11	s	METAL, CHIP 300 0.5% 1/10W
R962	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R963	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R964	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R965	1-216-697-11	s	METAL, CHIP 82K 0.5% 1/10W
R966	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R967	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R970	1-216-644-11	s	METAL, CHIP 510 0.5% 1/10W
R971	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R972	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
RV501	1-238-012-11	s	RES, ADJ, CARBON 1K
RV502	1-238-011-11	s	RES, ADJ, CARBON 470
RV601	1-238-012-11	s	RES, ADJ, CARBON 1K
RV602	1-238-019-11	s	RES, ADJ, CARBON 47K
RV603	1-238-016-11	s	RES, ADJ, CARBON 10K
*a	1-238-017-11	s	RES, ADJ, CARBON 22K
RV604	1-238-019-11	s	RES, ADJ, CARBON 47K
RV606	1-238-017-11	s	RES, ADJ, CARBON 22K
RV800	1-238-011-11	s	RES, ADJ, CARBON 470
RV801	1-238-011-11	s	RES, ADJ, CARBON 470
RV802	1-238-011-11	s	RES, ADJ, CARBON 470
RV860	1-238-012-11	s	RES, ADJ, CARBON 1K
X601	1-567-504-81	s	OSC, CRYSTAL 4.433619MHz

NOTES: *a; S/N 10001 thru 10030
*b; S/N 10001 thru 10130
*c; S/N 10001 thru 10280
*d; S/N 10001 thru 10480
*e; S/N 10131 thru 10280

DC-53A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-314-B	o	MOUNTED CIRCUIT BOARD, DC-53A
1pc	X-3166-801-1	o	SHIELD (B) ASS'Y, DC BOARD
4pcs	1-533-189-11	s	HOLDER, FUSE
1pc	2-335-143-01	o	FILM, INSULATING (for Q17)
1pc	3-173-469-01	o	BUSHING, TRANSISTOR (for Q17)
1pc	3-173-478-01	o	SHIELD (A), DC BOARD
2pcs	4-886-821-11	s	SCREW, M3 CASE
6pcs	7-621-775-40	s	SCREW +B 2.6x8
C3	1-131-368-00	s	TANTALUM 3.3uF 10% 16V
C4	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C5A	1-162-714-11	s	CERAMIC 150pF 1% 50V
C6	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C7	1-126-142-11	s	ELECT 100uF 20% 35V
C8	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C9	1-126-108-11	s	ELECT 56 20% 16V
C10	1-124-755-00	s	ELECT 3300uF 20% 16V
C11	1-127-504-00	s	ALUMN SOLID 0.47uF 20% 25V
C12	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C13	1-131-345-00	s	TANTALUM 0.47uF 10% 35V
C14	1-124-927-11	s	ELECT 4.7uF 20% 100V
C15	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C16	1-131-368-00	s	TANTALUM 3.3uF 10% 16V
C17	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C18	1-126-142-11	s	ELECT 100uF 20% 35V
C19	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C20	1-126-090-11	s	ELECT 82 20% 10V
C21	1-124-568-00	s	ELECT 4700uF 20% 10V
C22	1-127-503-00	s	ALUMN SOLID 0.33uF 20% 25V
C23	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C24	1-126-373-11	s	ELECT 470uF 20% 10V
C25	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C26	1-126-373-11	s	ELECT 470uF 20% 10V
C39	1-124-489-11	s	ELECT 150uF 20% 25V
C40	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C42	1-128-300-11	s	ELECT 330uF 20% 16V
C43	1-131-347-00	s	TANTALUM 1uF 10% 35V
C101	1-126-354-11	s	ELECT 3300uF 20% 35V
C102	1-126-354-11	s	ELECT 3300uF 20% 35V
C103	1-126-354-11	s	ELECT 3300uF 20% 35V
C104	1-126-354-11	s	ELECT 3300uF 20% 35V
CN101 W	1-564-241-00	o	CONNECTOR, VH 4P, MALE
CN902 W	1-560-899-00	o	CONNECTOR, 11P, MALE
D1	8-719-302-37	s	DIODE RBV-602
D2	8-719-981-00	s	DIODE ERC81-004
D6	8-719-981-38	s	DIODE ERC62M-004
D9	8-719-312-47	s	DIODE RBA-406B
D10	8-719-160-59	s	DIODE RD13FB2
D11	8-719-021-25	s	DIODE UZM4.7X
D13	8-719-200-02	s	DIODE 10E-2
D14	8-719-200-02	s	DIODE 10E-2
IC1	8-759-937-36	s	IC TL1451ACNS
IC2	8-759-512-71	s	IC S-8054HNM
IC3	8-759-632-07	s	IC M5237L
IC4	8-759-632-07	s	IC M5237L
L1	1-408-517-00	s	COIL, CHOKE 100uH
L2	1-421-459-00	s	COIL, CHOKE 5.6uH
L3	1-424-315-11	s	COIL, CHOKE 180uH
L4	1-421-459-00	s	COIL, CHOKE 5.6uH
Q1	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q2	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q3	8-729-804-08	s	TRANSISTOR 2SA1319-S
Q4	8-729-015-21	s	TRANSISTOR 2SB1204T
Q5	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q6	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q7	8-729-901-06	s	TRANSISTOR DTA144EK
Q8	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q9	8-729-804-08	s	TRANSISTOR 2SA1319-S
Q10	8-729-112-62	s	TRANSISTOR 2SA1441-K
Q11	8-729-924-90	s	TRANSISTOR 2SB1370-EF
Q12	8-729-924-90	s	TRANSISTOR 2SB1370-EF
Q17	8-729-012-04	s	TRANSISTOR 2SC4558
Q18	8-729-901-06	s	TRANSISTOR DTA144EK
Q19	8-729-230-49	s	TRANSISTOR 2SC2712-YG
R1	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R3	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R4	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R5	1-216-101-00	s	METAL, CHIP 150K 5% 1/10W
R6	1-216-666-11	s	METAL, CHIP 4.3K 0.5% 1/10W
R7	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R8	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R9	⚠1-207-613-00	s	WIREWOUND 0.15 10% 3W
R10	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R11	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R12	1-216-095-00	s	METAL, CHIP 82K 5% 1/10W
R13	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R14	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R15	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R16	1-249-413-11	s	CARBON 470 5% 1/4W
R17	⚠1-216-341-11	s	METAL 0.22 5% 1W
R18	⚠1-216-341-11	s	METAL 0.22 5% 1W
R19	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R20	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R21	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W
R22	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R23	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R25	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R26	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R27	1-216-101-00	s	METAL, CHIP 150K 5% 1/10W
R28	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R29	1-216-681-11	s	METAL, CHIP 18K 0.5% 1/10W
R30	1-216-095-00	s	METAL, CHIP 82K 5% 1/10W
R31	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R32	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R33	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R34	1-249-409-11	s	CARBON 220 5% 1/4W
R35	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R36	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R37	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R38	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R39	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R40	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R41	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R42	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R43	1-216-666-11	s	METAL, CHIP 4.3K 0.5% 1/10W
R59	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(DC-53A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R60	1-216-627-11	s	METAL, CHIP 100 0.5% 1/10W
R61	1-216-295-00	s	METAL, CHIP 0
R62	1-216-625-11	s	METAL, CHIP 82 0.5% 1/10W
R63	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R64	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R65	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R66	1-216-605-11	s	METAL, CHIP 12 0.5% 1/10W
R67	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R68	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
RV3	1-238-012-11	s	RES, ADJ, CARBON 1K
TH1	1-800-200-00	s	THERMISTOR S-3K
TH2	1-800-200-00	s	THERMISTOR S-3K

DP-165 BOARD

This board is included in KY-219 board.

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-6716-647-A	o	MOUNTED CIRCUIT BOARD, DP-165
ND101	8-719-948-06	s	LED LB-202ML, GRN
ND102	8-719-948-06	s	LED LB-202ML, GRN
ND103	8-719-948-06	s	LED LB-202ML, GRN

DR-153 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
2pcs	A-6756-022-A	o	MOUNTED CIRCUIT BOARD, DR-153
C1	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C2	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C3	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
CN1 B	1-568-260-21	s	CONNECTOR, 9P, MALE
CN2 B	1-568-260-21	s	CONNECTOR, 9P, MALE
CN3 B	1-568-260-21	s	CONNECTOR, 9P, MALE
IC1	8-759-207-46	s	IC TA7262P-LB
R1	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R2	1-216-045-00	s	METAL, CHIP 680 5% 1/10W

DR-167 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-6715-460-A	o	MOUNTED CIRCUIT BOARD, DR-167
2pcs	7-682-547-04	s	SCREW +B 3x6
C4	1-126-160-11	s	ELECT 1uF 20% 50V
C5	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C6	1-163-009-11	s	CERAMIC, CHIP 1000pF 10% 50V
C7	1-161-061-11	s	CERAMIC 0.068uF 10% 50V
C8	1-161-061-11	s	CERAMIC 0.068uF 10% 50V
C9	1-124-120-11	s	ELECT 220uF 20% 25V
C10	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C11	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C12	1-126-162-11	s	ELECT 3.3uF 20% 50V
C13	1-161-061-11	s	CERAMIC 0.068uF 10% 50V
CN633 W	1-506-482-11	s	CONNECTOR, 3P, MALE
CN634 W	------------	-	HARNESS (DRUM)
CN635 W	------------	-	HARNESS (LS SENSOR)
CN636 B	1-691-285-11	s	CONNECTOR, 10P, FEMALE
CN637 B	1-691-285-11	s	CONNECTOR, 10P, FEMALE
D1	8-719-200-02	s	DIODE 10E-2
D2	8-719-200-02	s	DIODE 10E-2
IC1	8-759-234-03	s	IC TA8424F
IC2	8-719-939-11	s	PHOTOINTERRUPTER GP-2S09-B
IC3	8-719-939-11	s	PHOTOINTERRUPTER GP-2S09-B
IC4	8-719-939-11	s	PHOTOINTERRUPTER GP-2S09-B
R1	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R2	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R3	1-216-303-11	s	METAL, CHIP 3 5% 1/10W
R4	1-216-303-11	s	METAL, CHIP 3 5% 1/10W
R5	1-216-031-00	s	METAL, CHIP 180 5% 1/10W
R6	1-216-027-00	s	METAL, CHIP 120 5% 1/10W
R7	1-216-303-11	s	METAL, CHIP 3 5% 1/10W
R8	⚠1-249-377-11	s	CARBON 0.47 5% 1/4W
R18	1-216-303-11	s	METAL, CHIP 3 5% 1/10W
R19	1-216-303-11	s	METAL, CHIP 3 5% 1/10W
R20	1-216-303-11	s	METAL, CHIP 3 5% 1/10W

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

DR-176 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-6715-459-A	o	MOUNTED CIRCUIT BOARD, DR-176
1pc	3-173-481-02	o	SHEET, INSULATING, DR BOARD
1pc	3-701-822-00	o	HOLDER, WIRE
3pcs	4-886-821-11	s	SCREW, M3 CASE
C1	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C3	1-124-589-11	s	ELECT 47uF 20% 16V
C4	1-163-113-00	s	CERAMIC, CHIP 68pF 5% 50V
C5	1-163-113-00	s	CERAMIC, CHIP 68pF 5% 50V
C14	1-124-589-11	s	ELECT 47uF 20% 16V
C15	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C16	1-163-009-11	s	CERAMIC, CHIP 1000pF 10% 50V
C17	1-163-009-11	s	CERAMIC, CHIP 1000pF 10% 50V
C18	1-126-163-11	s	ELECT 4.7uF 20% 50V
C20	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C21	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C22	1-130-491-00	s	MYLAR 0.047uF 5% 50V
CN631 W	1-563-493-11	s	CONNECTOR, FPC 28P, FEMALE
CN632 W	1-506-488-11	s	CONNECTOR, 9P, MALE
CN638 B	1-691-271-11	s	CONNECTOR, 10P, MALE
CN639 B	1-691-271-11	s	CONNECTOR, 10P, MALE
IC5	8-759-710-77	s	IC NJM4560MD
Q1	8-729-140-96	s	TRANSISTOR 2SD774-34
Q2	8-729-924-90	s	TRANSISTOR 2SB1370-EF
R9	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R10	⚠1-216-365-00	s	METAL 0.47 5% 2W
R11	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R12	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R13	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R14	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R15	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R16	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R17	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R21	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R22	1-216-033-00	s	METAL, CHIP 220 5% 1/10W

DUS-442 BOARD

This board is included in CP-183 board.

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-641-582-11	o	PRINTED CIRCUIT BOARD, DUS-442
1pc	3-177-786-01	o	BRACKET, CONNECTOR
CN101	1-691-287-11	s	CONNECTOR, ROUND 8P, FEMALE

DUS-445 BOARD

This board is included in SS-49A board.

Ref. No. or Q'ty	Part No.	SP	Description
C318	1-126-160-11	s	ELECT 1uF 20% 50V
C319	1-126-160-11	s	ELECT 1uF 20% 50V
C350	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
CN153	1-566-095-11	o	PIN, BOARD TO BOARD 11P (used 6P, cut 5P off)
CN154	1-566-095-11	o	PIN, BOARD TO BOARD 11P (used 8P, cut 3P off)
IC307	8-759-340-13	s	IC HD14013BP
IC308	8-759-045-38	s	IC MC14538BCP
R327	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R331	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R335	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R339	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R342	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R343	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R645	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

DUS-534 BOARD

This board is included in SS-49A board.

Ref. No. or Q'ty	Part No.	SP	Description
C500	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C501	1-124-499-11	s	ELECT, NONPOLAR 1uF 20% 50V
C502	1-164-161-11	s	CERAMIC, CHIP 2200pF 10% 100V
C503	1-126-157-11	s	ELECT 10uF 20% 16V
C504	1-126-160-11	s	ELECT 1uF 20% 50V
C505	1-124-589-11	s	ELECT 47uF 20% 16V
C506	1-163-017-00	s	CERAMIC, CHIP 4700pF 10% 50V
C507	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C508	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C509	1-164-161-11	s	CERAMIC, CHIP 2200pF 10% 100V
C510	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C511	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C512	1-126-157-11	s	ELECT 10uF 20% 16V
C513	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C514	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C517	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C531	1-124-589-11	s	ELECT 47uF 20% 16V
C532	1-124-589-11	s	ELECT 47uF 20% 16V
C533	1-124-589-11	s	ELECT 47uF 20% 16V
C534	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C535	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C537	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C538	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C541	1-126-163-11	s	ELECT 4.7uF 20% 50V
C542	1-126-163-11	s	ELECT 4.7uF 20% 50V
C550	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
D500	8-719-800-76	s	DIODE 1SS226
D501	8-719-104-34	s	DIODE 1S2836
D502	8-719-800-76	s	DIODE 1SS226
D504	8-719-104-34	s	DIODE 1S2836
IC500	8-759-632-58	s	IC M52435P
IC501	8-759-000-49	s	IC MC14066BCP
IC502	8-759-038-87	s	IC MC68HC05P7BSC402047B
IC511	8-759-981-96	s	IC RC4560D
Q500	8-729-115-10	s	TRANSISTOR 2SK105A-10
Q501	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q502	8-729-901-01	s	TRANSISTOR DTC144EK
Q503	8-729-901-01	s	TRANSISTOR DTC144EK
Q504	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q509	8-729-119-79	s	TRANSISTOR 2SC2785-FEK
Q515	8-729-901-01	s	TRANSISTOR DTC144EK
R500	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R501	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R502	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R503	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R504	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R505	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R506	1-216-103-00	s	METAL, CHIP 180K 5% 1/10W
R507	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R508	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R509	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R510	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R511	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R512	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R513	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R514	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R515	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R516	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R517	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R518	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R519	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R520	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R521	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R522	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R523	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R524	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R525	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R526	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R527	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R528	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R529	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R530	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R564	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R565	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R566	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R567	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
X500	1-577-358-21	s	RESONATOR, CERAMIC 4.00MHz

DUS-544 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-644-095-12	o	PRINTED CIRCUIT BOARD, DUS-544
C1	1-126-768-11	s	ELECT 2200uF 20% 16V
CN1 W	1-506-481-11	s	CONNECTOR, 2P, MALE

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

DUS-592 BOARD

When serial numbers are 10031 and higher, this board is included in VO-37A board.

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8276-478-A	o	MOUNTED CIRCIUT BOARD, DUS-592
C1	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C2	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C3	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
L1	1-410-384-31	s	INDUCTOR, CHIP 18uH
L2	1-410-390-11	s	INDUCTOR, CHIP 56uH
Q1	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q2	8-729-901-01	s	TRANSISTOR DTC144EK
Q3	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q4	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q5	8-729-901-01	s	TRANSISTOR DTC144EK
R1	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R2	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R3	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R4	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R5	1-216-295-00	s	METAL, CHIP 0
R6	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R7	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R8	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R9	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R10	1-216-095-00	s	METAL, CHIP 82K 5% 1/10W
R11	1-216-295-00	s	METAL, CHIP 0
R12	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W

HN-160 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-637-251-12	o	PRINTED CIRCUIT BOARD, HN-160
CN651 W	1-506-481-11	s	CONNECTOR, 2P, MALE
CN652 B	1-506-481-11	s	CONNECTOR, 2P, MALE
CN653 R	1-506-481-11	s	CONNECTOR, 2P, MALE
CN654 Y	1-506-481-11	s	CONNECTOR, 2P, MALE
CN655 B	1-506-484-11	s	CONNECTOR, 5P, MALE
CN656 W	1-506-482-11	s	CONNECTOR, 3P, MALE
CN657 Y	1-506-484-11	s	CONNECTOR, 5P, MALE
CN658 Y	1-506-487-11	s	CONNECTOR, 8P, MALE
CN659 B	1-506-481-11	s	CONNECTOR, 2P, MALE

KY-219 BOARD

This board includes the DP-165 board.

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-6717-646-A	o	MOUNTED CIRCUIT BOARD, KY-219
1pc	3-173-480-01	o	HOLDER (B), LED
C101	1-124-589-11	s	ELECT 47uF 20% 16V
C102	1-163-017-00	s	CERAMIC, CHIP 4700pF 10% 50V
C103	1-124-589-11	s	ELECT 47uF 20% 16V
C104	1-124-589-11	s	ELECT 47uF 20% 16V
C105	1-163-017-00	s	CERAMIC, CHIP 4700pF 10% 50V
C106	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C107	1-163-011-11	s	CERAMIC, CHIP 1500pF 10% 50V
C109	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C110	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C111	1-126-176-11	s	ELECT 220uF 20% 10V
C112	1-126-176-11	s	ELECT 220uF 20% 10V
C113	1-163-017-00	s	CERAMIC, CHIP 4700pF 10% 50V
C114	1-163-017-00	s	CERAMIC, CHIP 4700pF 10% 50V
C115	1-126-103-11	s	ELECT 470uF 20% 16V
CN151 R	1-506-474-11	o	CONNECTOR, 9P, MALE
CN152 R	1-506-471-11	s	CONNECTOR, 6P, MALE
CN154 W	1-506-473-11	s	CONNECTOR, 8P, MALE
CN155 B	1-691-272-11	s	CONNECTOR, 30P, MALE
CN157 B	1-506-469-11	s	CONNECTOR, 4P, MALE
D101	8-719-400-18	s	DIODE MA152WK
D102	8-719-400-18	s	DIODE MA152WK
D103	8-719-400-18	s	DIODE MA152WK
D104	8-719-400-18	s	DIODE MA152WK
D105	8-719-400-18	s	DIODE MA152WK
D106	8-719-400-18	s	DIODE MA152WK
D107	8-719-400-18	s	DIODE MA152WK
D108	8-719-400-18	s	DIODE MA152WK
D109	8-719-400-18	s	DIODE MA152WK
D110	8-719-400-18	s	DIODE MA152WK
D111	8-719-400-18	s	DIODE MA152WK
D113	8-719-802-11	s	LED TLUG154, GRN
D114	8-719-802-11	s	LED TLUG154, GRN
D115	8-719-802-11	s	LED TLUG154, GRN
D116	8-719-802-11	s	LED TLUG154, GRN
D117	8-719-984-64	s	LED SLJ-165MG5HLF, GRN
D119	8-719-802-11	s	LED TLUG154, GRN
D120	8-719-802-11	s	LED TLUG154, GRN
D122	8-719-802-11	s	LED TLUG154, GRN
D125	8-719-802-11	s	LED TLUG154, GRN
D126	8-719-802-11	s	LED TLUG154, GRN
D127	8-719-802-11	s	LED TLUG154, GRN
D128	8-719-802-11	s	LED TLUG154, GRN
D130	8-719-802-11	s	LED TLUG154, GRN
D131	8-719-802-11	s	LED TLUG154, GRN
D132	8-719-802-11	s	LED TLUG154, GRN
D133	8-719-802-11	s	LED TLUG154, GRN
D135	8-719-800-76	s	DIODE 1SS226
D137	8-719-802-11	s	LED TLUG154, GRN
D138	8-719-802-11	s	LED TLUG154, GRN
D139	8-719-802-11	s	LED TLUG154, GRN
D140	8-719-802-11	s	LED TLUG154, GRN
D141	8-719-802-11	s	LED TLUG154, GRN
D142	8-719-802-11	s	LED TLUG154, GRN
IC101	8-759-070-50	s	IC MC68HC05C4BSC403089B

NOTES: *a; S/N 10001 thru 10030
*b; S/N 10001 thru 10130
*c; S/N 10001 thru 10280
*d; S/N 10001 thru 10480
*e; S/N 10131 thru 10280

(KY-219 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC102	8-759-051-53	s	IC TD62381F
IC103	8-759-051-53	s	IC TD62381F
L101	1-421-459-00	s	COIL, CHOKE 5.6uH
Q101	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q105	8-729-904-54	s	TRANSISTOR DTB143EK
Q106	8-729-904-54	s	TRANSISTOR DTB143EK
Q107	8-729-904-54	s	TRANSISTOR DTB143EK
Q108	8-729-904-54	s	TRANSISTOR DTB143EK
Q109	8-729-904-54	s	TRANSISTOR DTB143EK
Q110	8-729-904-54	s	TRANSISTOR DTB143EK
Q111	8-729-904-54	s	TRANSISTOR DTB143EK
Q112	8-729-904-54	s	TRANSISTOR DTB143EK
Q113	8-729-904-54	s	TRANSISTOR DTB143EK
Q114	8-729-904-54	s	TRANSISTOR DTB143EK
Q115	8-729-904-54	s	TRANSISTOR DTB143EK
Q116	8-729-904-54	s	TRANSISTOR DTB143EK
Q117	8-729-904-54	s	TRANSISTOR DTB143EK
Q118	8-729-901-06	s	TRANSISTOR DTA144EK
Q119	8-729-904-54	s	TRANSISTOR DTB143EK
Q120	8-729-904-54	s	TRANSISTOR DTB143EK
Q121	8-729-904-54	s	TRANSISTOR DTB143EK
R101	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R102	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R103	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R104	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R105	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R106	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R107	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R108	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R109	1-249-408-11	s	CARBON 180 5% 1/4W
R110	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R111	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R112	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R113	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R119	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R120	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R121	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R122	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R123	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R124	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R125	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R126	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R127	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R128	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R129	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R130	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R131	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R132	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R133	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R134	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R135	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R136	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R137	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R138	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R139	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R140	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R141	1-216-025-00	s	METAL, CHIP 100 5% 1/10W

(KY-219 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R142	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R143	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R145	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R147	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R148	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R149	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R150	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R151	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R152	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R153	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R154	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R155	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R156	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R157	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R158	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R159	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R160	1-249-409-11	s	CARBON 220 5% 1/4W
R161	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R162	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R163	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R164	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R165	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R167	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R168	1-249-408-11	s	CARBON 180 5% 1/4W
RV101	1-241-802-11	s	RES, VAR, CARBON 100K
S101	1-552-539-00	s	SWITCH, PUSH
S102	1-570-472-11	s	SWITCH, PUSH
S103	1-570-472-11	s	SWITCH, PUSH
S104	1-572-992-11	s	SWITCH, SLIDE
S105	1-572-991-11	s	SWITCH, SLIDE
S106	1-552-539-00	s	SWITCH, PUSH
S108	1-570-472-11	s	SWITCH, PUSH
S109	1-570-472-11	s	SWITCH, PUSH
S110	1-552-539-00	s	SWITCH, PUSH
S111	1-552-539-00	s	SWITCH, PUSH
S112	1-552-539-00	s	SWITCH, PUSH
S113	1-570-472-11	s	SWITCH, PUSH
S114	1-552-539-00	s	SWITCH, PUSH
S115	1-570-472-11	s	SWITCH, PUSH
S116	1-552-539-00	s	SWITCH, PUSH
S117	1-570-472-11	s	SWITCH, PUSH
S118	1-572-993-11	s	SWITCH, SLIDE
S119	1-572-991-11	s	SWITCH, SLIDE
S120	1-572-993-11	s	SWITCH, SLIDE
X101	1-567-192-11	s	RESONATOR, CERAMIC 4.00MHz

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

LD-35 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
CN620 W	1-506-481-11	s	CONNECTOR, 2P, MALE

LE-80 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-637-247-11	o	PRINTED CIRCUIT BOARD, LE-80
1pc	3-167-028-02	o	HOLDER, LED
1pc	8-719-985-00	s	LED GL451VS1, IR

LE-86 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-637-250-11	o	PRINTED CIRCUIT BOARD, LE-86
1pc	8-719-821-22	s	LED TL0221, ORG

RP-62A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-316-A	o	MOUNTED CIRCUIT BOARD, RP-62A
1pc	3-173-468-01	o	SHEET, INSULATING, RP
1pc	3-173-491-02	o	SHIELD (A), RP
1pc	3-173-492-01	o	SHIELD (B), RP
C1	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C2	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C3	Deleted.		
*c	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C3A	1-161-051-00	s	CERAMIC 0.01uF 10% 50V
*c	Not in use.		
C4	1-124-589-11	s	ELECT 47uF 20% 16V
C5	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C101	1-126-163-11	s	ELECT 4.7uF 20% 50V
C102	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C103	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C104	1-124-589-11	s	ELECT 47uF 20% 16V
C105	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C106	1-124-463-00	s	ELECT 0.1uF 20% 50V
C107	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C108	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C109	1-163-089-00	s	CERAMIC, CHIP 6pF 50V
C111	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C112	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C113	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C114	Deleted.		
*c	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C115	Deleted.		
*c	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C201	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C203	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C204	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C205	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C207	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C209	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C210	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C211	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C213	1-164-346-11	s	CERAMIC, CHIP 1uF 16V
*a	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C214	1-126-153-11	s	ELECT 22uF 20% 6.3V
C216	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C217	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C218	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C219	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C220	1-163-253-11	s	CERAMIC, CHIP 120pF 5% 50V
C221	1-163-127-00	s	CERAMIC, CHIP 270pF 5% 50V
C222	1-163-131-00	s	CERAMIC, CHIP 390pF 5% 50V
C223	1-164-161-11	s	CERAMIC, CHIP 2200pF 10% 100V
C224	1-126-153-11	s	ELECT 22uF 20% 6.3V
C225	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C226	1-126-153-11	s	ELECT 22uF 20% 6.3V
C227	Deleted.		
*b	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C230	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C231	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C232	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V
C233	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C234	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C235	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C236	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(RP-62A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C237	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C238	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C239	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C240	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C241	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C242	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C243	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V
C244	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C245	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V
C246	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C247	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C248	1-163-115-00	s	CERAMIC, CHIP 82pF 5% 50V
C249	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C250	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C251	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C252	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C253	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C254	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C255	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C256	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C257	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C258	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C259	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C260	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C261	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C262	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C263	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C264	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C265	1-124-589-11	s	ELECT 47uF 20% 16V
C266	1-163-085-00	s	CERAMIC, CHIP 2pF 50V
C267	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C270	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C271A	Deleted.		
*a	1-164-346-11	s	CERAMIC, CHIP 1uF 16V
C272A	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C273A	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C274A	1-162-207-31	s	CERAMIC 22pF 5% 50V
*c	Change MICA -> CERAMIC.		
C275A	1-162-207-31	s	CERAMIC 22pF 5% 50V
*c	Change MICA -> CERAMIC.		
C301	1-124-589-11	s	ELECT 47uF 20% 16V
C302	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C303	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
*c	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C304	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C305	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C306	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C307	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C308A	1-102-110-00	s	CERAMIC 220pF 10% 50V
*c	Not in use.		
C319	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C320	1-163-143-00	s	CERAMIC, CHIP 1200pF 5% 50V
C323	1-124-463-00	s	ELECT 0.1uF 20% 50V
C324	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C325	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C326	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C327	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C328	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C329	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V

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Ref. No. or Q'ty	Part No.	SP	Description
C330	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C331	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C332	1-126-160-11	s	ELECT 1uF 20% 50V
C333	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C334	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C335	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C336	1-163-275-11	s	CERAMIC, CHIP 1000pF 5% 50V
C337	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C339	1-126-157-11	s	ELECT 10uF 20% 16V
C340	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C341	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C342	1-126-163-11	s	ELECT 4.7uF 20% 50V
C350	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C351	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C352	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C353	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C354	1-126-163-11	s	ELECT 4.7uF 20% 50V
C355	1-124-589-11	s	ELECT 47uF 20% 16V
C356	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
*c	1-163-089-00	s	CERAMIC, CHIP 6pF 50V
CN801 B	1-563-590-11	o	CONNECTOR, FPC 13P, FEMALE
CN802 W	1-506-486-11	s	CONNECTOR, 7P, MALE
CN803 R	1-506-485-11	s	CONNECTOR, 6P, MALE
CN804 W	1-564-031-00	o	CONNECTOR, 6P, MALE
CN805 Y	1-506-485-11	s	CONNECTOR, 6P, MALE
CN806 W	1-506-484-11	s	CONNECTOR, 5P, MALE
CN807 W	1-506-485-11	s	CONNECTOR, 6P, MALE
CN808 W	1-506-482-11	s	CONNECTOR, 3P, MALE
D201	8-719-400-18	s	DIODE MA152WK
D202	8-719-400-18	s	DIODE MA152WK
D203	8-719-400-18	s	DIODE MA152WK
D301	8-719-400-18	s	DIODE MA152WK
DL201	1-415-858-11	s	DELAY LINE 35nS
DL202	1-415-858-11	s	DELAY LINE 35nS
IC101	8-759-420-60	s	IC AN6392L
IC201	8-759-320-52	s	IC HA118019NT
IC202	8-759-012-00	s	IC MC10H116M
IC301	8-759-320-55	s	IC HA12115MP
IC302	8-759-998-32	s	IC CXD2107M
L101	1-408-968-21	s	INDUCTOR 6.8uH
L102	1-410-149-11	s	INDUCTOR 39uH (SHIELD TYPE)
L103	1-408-982-11	s	INDUCTOR 100uH
L200	1-408-982-11	s	INDUCTOR 100uH
L201	1-408-948-00	s	INDUCTOR 220uH
L202	1-408-976-21	s	INDUCTOR 33uH
L203	1-408-971-21	s	INDUCTOR 12uH
L204	1-408-977-21	s	INDUCTOR 39uH
L205	1-408-948-00	s	INDUCTOR 220uH
L206	1-408-970-21	s	INDUCTOR 10uH
L207	1-408-978-21	s	INDUCTOR 47uH
L208	1-408-973-21	s	INDUCTOR 18uH
L209	1-408-978-21	s	INDUCTOR 47uH
L210	1-408-982-11	s	INDUCTOR 100uH
L211	1-408-982-11	s	INDUCTOR 100uH
L212	1-408-974-21	s	INDUCTOR 22uH
L213	1-408-982-11	s	INDUCTOR 100uH
L214	1-408-972-21	s	INDUCTOR 15uH
L215	1-408-970-21	s	INDUCTOR 10uH

NOTES: *a; S/N 10001 thru 10030   *c; S/N 10001 thru 10280   *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130   *d; S/N 10001 thru 10480

(RP-62A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
L301	1-408-989-21	s	INDUCTOR 470uH
L302	1-410-140-11	s	INDUCTOR 6.8uH (SHIELD TYPE)
L303	1-408-982-11	s	INDUCTOR 100uH
L304	1-408-982-11	s	INDUCTOR 100uH
L305	1-408-982-11	s	INDUCTOR 100uH
L306	1-408-970-21	s	INDUCTOR 10uH
Q101	8-729-202-38	s	TRANSISTOR 2SC3326N
Q102	8-729-901-01	s	TRANSISTOR DTC144EK
Q103	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q104	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q105	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q201	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q202	8-729-901-01	s	TRANSISTOR DTC144EK
Q203	8-729-901-01	s	TRANSISTOR DTC144EK
Q204	8-729-901-01	s	TRANSISTOR DTC144EK
Q210	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q211	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q212	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q213	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q214	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q215	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q216	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q217	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q218	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q219	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q220	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q221	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q222	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q223	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q301	8-729-901-01	s	TRANSISTOR DTC144EK
Q302	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q303	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q304	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q310	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q311	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q312	8-729-901-01	s	TRANSISTOR DTC144EK
Q313	8-729-901-01	s	TRANSISTOR DTC144EK
Q314	8-729-901-06	s	TRANSISTOR DTA144EK
Q315	8-729-901-01	s	TRANSISTOR DTC144EK
R101	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R102	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R103	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R104	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R105	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R106	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R107	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R108	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R109	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R110	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R111	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R112	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R113	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R114	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R115	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R116	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R117	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R118	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R120A	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
	*c Not in use.		

(RP-62A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R121A	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
	*c Not in use.		
R201	1-216-632-11	s	METAL, CHIP 160 0.5% 1/10W
R202	1-216-630-11	s	METAL, CHIP 130 0.5% 1/10W
R203	1-216-630-11	s	METAL, CHIP 130 0.5% 1/10W
R204	1-216-027-00	s	METAL, CHIP 120 5% 1/10W
R205	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R206	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R207	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R208	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R209	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R210	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R211	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R212	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R213	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R214	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R215	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R216	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R217	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R218	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R219	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R220	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R221	1-216-295-00	s	METAL, CHIP 0
R222A	1-216-295-00	s	METAL, CHIP 0
	*a Not in use.		
R230	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R231	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R232	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R233	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R234	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R235	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R236	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R237	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R238	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R239	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R240	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R241	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R242	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R243	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R244	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R245	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R246	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R247	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R248	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R249	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R250	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R251	1-216-039-00	s	METAL, CHIP 390 5% 1/10W
R252	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R253	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R254	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R255	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R256	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R257	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R258	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R259	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R260	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R261	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R262	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R263	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W

NOTES: *a; S/N 10001 thru 10030　*c; S/N 10001 thru 10280　*e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130　*d; S/N 10001 thru 10480

(RP-62A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R264	1-216-063-00	s	METAL, CHIP 3.9K 5% 1/10W
R265	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R266	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R267	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R268	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R269	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R270	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R271	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R272	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R273	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R274	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R275	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R276	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R277	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R278	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R279	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R280	1-216-636-11	s	METAL, CHIP 240 0.5% 1/10W
R281	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R282	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
*b	Change 1.2K -> 1.8K.		
R283	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R284	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R285	1-216-636-11	s	METAL, CHIP 240 0.5% 1/10W
R286	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R287	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
*b	Change 1.2K -> 1.8K.		
R288	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R289	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R290	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R291	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R292	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R293	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R301	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R302	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R303	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R304	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R305	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R306	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R308	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R309	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R320	1-216-019-00	s	METAL, CHIP 56 5% 1/10W
R322	1-216-001-00	s	METAL, CHIP 10 5% 1/10W
R323	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R324	1-216-304-11	s	METAL, CHIP 3.3 5% 1/10W
R325	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R327	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R328	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R329	1-216-304-11	s	METAL, CHIP 3.3 5% 1/10W
R330	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R331	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R340	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R341	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R342	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R343	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R344	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R345	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R346	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R348	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R349	1-216-295-00	s	METAL, CHIP 0
*c	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W

(RP-62A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R350	Deleted.		
*c	1-216-687-11	s	METAL, CHIP 33K 0.5% 1/10W
RV201	1-241-136-11	s	RES, ADJ, CARBON 10K

SE-151 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-637-245-13	o	PRINTED CIRCUIT BOARD, SE-151
1pc	1-506-467-11	s	CONNECTOR, 2P, MALE
1pc	3-167-013-02	o	HOLDER, ST SENSOR
1pc	8-729-926-31	s	PHOTOTRANSISTOR PT483F1S

SE-152 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-637-246-12	o	PRINTED CIRCUIT BOARD, SE-152
1pc	3-167-013-02	o	HOLDER, ST SENSOR
1pc	8-729-926-31	s	PHOTOTRANSISTOR PT483F1S

SE-159 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-637-249-11	o	PRINTED CIRCUIT BOARD, SE-159
1pc	1-806-232-21	s	DETECTOR MB-1102/S.N
1pc	3-167-036-01	o	HOLDER, DETECTOR

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

SS-49A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
This board of includes DUS-445 and DUS-534 boards.			
1pc	A-8271-315-A	o	MOUNTED CIRCUIT BOARD, SS-49A
3pcs	3-682-057-11	s	SPACER (SMALL)
2pcs	4-924-098-31	o	HOLDER, PC BOARD
2pcs	4-886-821-11	s	SCREW, M3 CASE
C101	1-126-993-11	s	ELECT 100uF 20% 16V
C102	1-126-935-11	s	ELECT 470uF 20% 16V
C103	1-125-498-11	s	DOUBLE LAYERS 1.0F 5.5V
C104	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C105	1-124-234-00	s	ELECT 22uF 20% 16V
C106	1-126-993-11	s	ELECT 100uF 20% 16V
C107	1-126-157-11	s	ELECT 10uF 20% 16V
C108	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C109	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C110	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C111	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C113	1-124-589-11	s	ELECT 47uF 20% 16V
C115	1-124-589-11	s	ELECT 47uF 20% 16V
C118	1-124-234-00	s	ELECT 22uF 20% 16V
C119	1-124-257-00	s	ELECT 2.2uF 20% 50V
C120	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C121	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C122	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C123	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C124	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C125	1-130-471-00	s	MYLAR 1000pF 5% 50V
C129	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C130	1-130-471-00	s	MYLAR 1000pF 5% 50V
C139	1-124-589-11	s	ELECT 47uF 20% 16V
C140	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C141	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C142	1-124-589-11	s	ELECT 47uF 20% 16V
C143	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C144	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C146	1-124-589-11	s	ELECT 47uF 20% 16V
C147	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C148	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C149	1-126-157-11	s	ELECT 10uF 20% 16V
C150	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C154	1-130-471-00	s	MYLAR 1000pF 5% 50V
C155	1-126-162-11	s	ELECT 3.3uF 20% 50V
C156	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C157	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C167	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C168	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C169	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C170	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C171	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C180	1-126-163-11	s	ELECT 4.7uF 20% 50V
C301	1-124-589-11	s	ELECT 47uF 20% 16V
C302	1-126-162-11	s	ELECT 3.3uF 20% 50V
C303	1-126-162-11	s	ELECT 3.3uF 20% 50V
C304	1-126-157-11	s	ELECT 10uF 20% 16V
C305	1-126-157-11	s	ELECT 10uF 20% 16V
C306	1-126-162-11	s	ELECT 3.3uF 20% 50V
C307	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C308	1-124-589-11	s	ELECT 47uF 20% 16V
C309	1-124-589-11	s	ELECT 47uF 20% 16V

(SS-49A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C310	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C311	1-124-242-00	s	ELECT 33uF 20% 25V
C312	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C313	1-124-242-00	s	ELECT 33uF 20% 25V
C314	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C315	1-124-242-00	s	ELECT 33uF 20% 25V
C316	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C317	1-124-242-00	s	ELECT 33uF 20% 25V
C320	1-124-589-11	s	ELECT 47uF 20% 16V
C321	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C322	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C323	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C324	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C325	1-130-495-00	s	MYLAR 0.1uF 5% 50V
C326	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C327	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C328	1-126-993-11	s	ELECT 100uF 20% 16V
C329	1-163-017-00	s	CERAMIC, CHIP 4700pF 10% 50V
C330	1-126-934-11	s	ELECT 220uF 20% 16V
C331	1-130-495-00	s	MYLAR 0.1uF 5% 50V
C332	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C333	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C334	1-126-993-11	s	ELECT 100uF 20% 16V
C335	1-163-017-00	s	CERAMIC, CHIP 4700pF 10% 50V
C336	1-126-934-11	s	ELECT 220uF 20% 16V
C337	1-126-768-11	s	ELECT 2200uF 20% 16V
C338	1-124-589-11	s	ELECT 47uF 20% 16V
C339	1-124-465-00	s	ELECT 0.47uF 20% 50V
C340	1-124-465-00	s	ELECT 0.47uF 20% 50V
C341	1-163-104-00	s	CERAMIC, CHIP 30pF 5% 50V
C342	1-163-104-00	s	CERAMIC, CHIP 30pF 5% 50V
C343	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C344	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C345	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C346	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C347	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C348	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C349	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C351	1-124-465-00	s	ELECT 0.47uF 20% 50V
C352	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C353	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C354	1-126-160-11	s	ELECT 1uF 20% 50V
C355	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C363	1-126-993-11	s	ELECT 100uF 20% 16V
C364	1-126-993-11	s	ELECT 100uF 20% 16V
C365	1-126-993-11	s	ELECT 100uF 20% 16V
C366	1-126-993-11	s	ELECT 100uF 20% 16V
C367	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C515	1-130-471-00	s	MYLAR 1000pF 5% 50V
C516	1-130-471-00	s	MYLAR 1000pF 5% 50V
C518	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C519	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C520	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C521	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C522	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C523	1-124-589-11	s	ELECT 47uF 20% 16V
C524	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C525	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C526	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(SS-49A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C527	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C528	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C529	1-126-993-11	s	ELECT 100uF 20% 16V
C530	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C536	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C539	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C540	1-124-589-11	s	ELECT 47uF 20% 16V
C545	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C546	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C547	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C548	1-126-516-11	s	ELECT 120uF 20% 16V
C601	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C602	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C603	1-126-160-11	s	ELECT 1uF 20% 50V
C604	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C605	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C606	1-126-993-11	s	ELECT 100uF 20% 16V
C607	1-126-163-11	s	ELECT 4.7uF 20% 50V
C670	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
CN100 W	1-560-899-00	o	CONNECTOR, 11P, MALE
CN101 W	1-563-461-11	o	CONNECTOR, FPC 28P, FEMALE
CN102 Y	1-506-473-11	o	CONNECTOR, 8P, MALE
CN103 B	1-506-470-11	s	CONNECTOR, 5P, MALE
CN105 W	------------	-	HARNESS (CASSECON)
CN106 W	------------	-	HARNESS (LD MOTOR)
CN107 W	1-506-468-11	s	CONNECTOR, 3P, MALE
CN108 W	1-506-467-11	s	CONNECTOR, 2P, MALE
CN110 R	1-506-477-11	s	CONNECTOR, 12P, MALE
CN111 R	1-506-474-11	s	CONNECTOR, 9P, MALE
CN114 W	1-506-476-11	s	CONNECTOR, 11P, MALE
CN116 Y	1-506-478-11	s	CONNECTOR, 13P, MALE
CN117 B	1-506-469-11	s	CONNECTOR, 4P, MALE
CN118 R	1-506-468-11	s	CONNECTOR, 3P, MALE
CN123 W	1-506-474-11	s	CONNECTOR, 9P, MALE
CN124 W	------------	-	HARNESS (T-REEL)
CN130 B	1-506-471-11	s	CONNECTOR, 6P, MALE
CN131 B	1-506-475-11	s	CONNECTOR, 10P, MALE
CN132 R	1-506-471-11	s	CONNECTOR, 6P, MALE
CN133 B	1-506-468-11	s	CONNECTOR, 3P, MALE
CN134 W	1-562-883-11	o	CONNECTOR, FPC 20P, FEMALE
CN140 W	------------	-	HARNESS (AU CONT)
CN142 W	------------	-	HARNESS (AU REG)
CN810	1-691-271-11	s	CONNECTOR, 10P, MALE
CN811	1-691-271-11	s	CONNECTOR, 10P, MALE
D101	8-719-911-19	s	DIODE 1SS119
D102	8-719-104-34	s	DIODE 1S2836
D104	8-719-200-02	s	DIODE 10E-2
D105	8-719-200-02	s	DIODE 10E-2
D108	8-719-938-75	s	DIODE SB05-05CP
*a	8-719-031-57	s	DIODE SB05-05NP
D112	8-719-109-68	s	DIODE RD3.6ES-B1
D113	8-719-104-34	s	DIODE 1S2836
D116	8-719-109-84	s	DIODE RD5.1ES-B1
D119	8-719-911-19	s	DIODE 1SS119
D120A	8-719-911-19	s	DIODE 1SS119
*a	Not in use.		
D301	8-719-800-76	s	DIODE 1SS226
D302	8-719-911-19	s	DIODE 1SS119
D303	8-719-106-16	s	DIODE RD6.8M-B1

(SS-49A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
D308	8-719-400-18	s	DIODE MA152WK
D310	8-719-106-43	s	DIODE RD9.1M-B1
D311	8-719-982-04	s	DIODE ERB81-004
D312	8-719-982-04	s	DIODE ERB81-004
D313	8-719-200-02	s	DIODE 10E-2
D314	8-719-200-02	s	DIODE 10E-2
D315	8-719-400-18	s	DIODE MA152WK
D316	8-719-106-16	s	DIODE RD6.8M-B1
D317	8-719-160-68	s	DIODE RD18FB2
D318	8-719-160-68	s	DIODE RD18FB2
D319	8-719-400-18	s	DIODE MA152WK
D320	8-719-911-19	s	DIODE 1SS119
D321	8-719-800-76	s	DIODE 1SS226
D326	8-719-110-16	s	DIODE RD10ES-B1
D327	8-719-200-02	s	DIODE 10E-2
D328	8-719-200-02	s	DIODE 10E-2
D329	8-719-200-02	s	DIODE 10E-2
D505	8-719-104-34	s	DIODE 1S2836
D506	8-719-104-34	s	DIODE 1S2836
D508	8-719-104-34	s	DIODE 1S2836
D509	8-719-104-34	s	DIODE 1S2836
IC101	8-752-840-67	s	IC CXP80624-436Q
IC102	8-759-720-81	s	IC M6M80011AP
IC103	8-759-745-60	s	IC NJM4560D
IC104	8-759-512-71	s	IC S-8054HNM
IC106	8-759-745-60	s	IC NJM4560D
IC107	8-759-729-03	s	IC NJM2903D
IC108	8-759-135-80	s	IC uPC358C
IC109	8-759-983-45	s	IC BA6238A
IC111	8-759-140-53	s	IC uPD4053BC
IC112	8-759-711-41	s	IC NJM2220S
IC114	8-759-917-43	s	IC SN74HC138AN
IC115	8-759-202-61	s	IC TC4094BP
IC116	8-759-512-71	s	IC S-8054HNM
IC301	8-759-912-77	s	IC LM324N
IC302	8-759-912-77	s	IC LM324N
IC303	8-759-140-53	s	IC uPD4053BC
IC304	8-759-984-03	s	IC LM339N
IC305	8-759-729-03	s	IC NJM2903D
IC306	8-759-091-41	s	IC uPD75108CW-W27
IC309	8-759-729-03	s	IC NJM2903D
IC310	8-759-135-80	s	IC uPC358C
IC311	8-759-912-77	s	IC LM324N
IC312	8-759-135-80	s	IC uPC358C
IC314	8-759-140-53	s	IC uPD4053BC
IC315	8-759-140-53	s	IC uPD4053BC
IC503	8-759-708-05	s	IC NJM78L05A
IC504	8-759-916-20	s	IC SN74HC14AN
IC505	8-759-745-60	s	IC NJM4560D
IC506	8-759-040-70	s	IC MC14070BCP
IC508	8-759-340-13	s	IC HD14013BP
IC509	8-759-745-60	s	IC NJM4560D
IC510	8-759-140-53	s	IC uPD4053BC
IC512	8-759-140-53	s	IC uPD4053BC
IC513	8-759-729-03	s	IC NJM2903D
IC514	8-759-745-60	s	IC NJM4560D
IC601	8-759-729-03	s	IC NJM2903D

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(SS-49A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
L101	1-410-482-31	s	INDUCTOR 100uH
L301	1-408-519-00	s	COIL, CHOKE 420uH
L302	1-408-519-00	s	COIL, CHOKE 420uH
PS101	⚠1-532-685-00	s	LINK, IC 0.8A
PS105	⚠1-532-637-00	s	LINK, IC 1.0A
PS301	⚠1-532-685-00	s	LINK, IC 0.8A
Q101	8-729-924-90	s	TRANSISTOR 2SB1370-EF
Q102	8-729-901-01	s	TRANSISTOR DTC144EK
Q103	8-729-901-06	s	TRANSISTOR DTA144EK
Q104	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q107	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q108	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q109	8-729-119-77	s	TRANSISTOR 2SA1175-FEK
Q110	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q114	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q115	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q116	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q117	8-729-901-00	s	TRANSISTOR DTC124EK
Q118	8-729-901-00	s	TRANSISTOR DTC124EK
Q119	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q120	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q121	8-729-901-01	s	TRANSISTOR DTC144EK
Q128	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q129	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q130	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q131	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q134	8-729-901-01	s	TRANSISTOR DTC144EK
Q301	8-729-901-01	s	TRANSISTOR DTC144EK
Q302	8-729-901-01	s	TRANSISTOR DTC144EK
Q303	8-729-901-01	s	TRANSISTOR DTC144EK
Q304	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q305	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q306	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q307	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q308	8-729-804-87	s	TRANSISTOR 2SB1142-T
Q309	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q310	8-729-804-87	s	TRANSISTOR 2SB1142-T
Q311	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q312	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q313	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q314	8-729-320-60	s	TRANSISTOR 2SD788-34
Q315	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q316	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q317	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q318	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q319	8-729-320-60	s	TRANSISTOR 2SD788-34
Q320	8-729-901-01	s	TRANSISTOR DTC144EK
Q321	8-729-901-01	s	TRANSISTOR DTC144EK
Q322	8-729-901-01	s	TRANSISTOR DTC144EK
Q323	8-729-202-38	s	TRANSISTOR 2SC3326N
Q331	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q332	8-729-901-01	s	TRANSISTOR DTC144EK
Q333	8-729-901-01	s	TRANSISTOR DTC144EK
Q334	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q335	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q336	8-729-901-01	s	TRANSISTOR DTC144EK
Q337	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q338	8-729-320-60	s	TRANSISTOR 2SD788-34

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Ref. No. or Q'ty	Part No.	SP	Description
Q340	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q341	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q342	8-729-320-60	s	TRANSISTOR 2SD788-34
Q346	8-729-889-40	s	TRANSISTOR 2SD894
Q347	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q348	8-729-811-11	s	TRANSISTOR 2SD1111
Q349	8-729-901-06	s	TRANSISTOR DTA144EK
Q350	8-729-901-01	s	TRANSISTOR DTC144EK
Q351	8-729-901-01	s	TRANSISTOR DTC144EK
Q352	8-729-900-52	s	TRANSISTOR DTC114YK
Q506	8-729-105-73	s	TRANSISTOR 2SK523-L2
Q507	8-729-901-01	s	TRANSISTOR DTC144EK
Q510	8-729-901-01	s	TRANSISTOR DTC144EK
Q516	8-729-901-01	s	TRANSISTOR DTC144EK
R101	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R102	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R103	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R104	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R105	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R106	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R107	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R108	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R109	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R110	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R111	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R112	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R114	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R115	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R116	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R119	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R120	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R121	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R123	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R124	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R125	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R126	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R127	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R128	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R129	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R130	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R131	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R132	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R133	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R134	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R135	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R136	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R137	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R138	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R139	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R140	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R141	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R142	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R143	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R144	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R145	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R146	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R147	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R148	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R149	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

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Ref. No. or Q'ty	Part No.	SP	Description
R150	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R151	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R152	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R153	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R154	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R155	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R156	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R157	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R158	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R159	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R160	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R161	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R162	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R163	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R164	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R165	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R166	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R167	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R168	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R169	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R170	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R171	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R172	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R173	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R174	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R175	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R176	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R177	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R178	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R179	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R180	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R181	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R182	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R183	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R184	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R185	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R186	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R187	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R188	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R194	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R195	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R196	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R197	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R198	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R199	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R200	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R201	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R202	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R203	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R204	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R205	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R206	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R207	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R208	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R209	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R210	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R211	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R212	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R213	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R214	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R215	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R217	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R218	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R219	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R220	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R221	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R222	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R223	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R224	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R226	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R227	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R228	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R229	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R230	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R231	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R232	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R233	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R234	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R235	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R236	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R237	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R238	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R239	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R240	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R241	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R242	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R243	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R245	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R247	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R250	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R255	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R268	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R269	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R270	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R271	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R272	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R273	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R274	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R275	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R276	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R277	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R278	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R280	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R281	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R282	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R283	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R284	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R285	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R289	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R290	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R291	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R292	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R293	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R299	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R301	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R302	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R303	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R304	1-216-045-00	s	METAL, CHIP 680 5% 1/10W

NOTES: *a; S/N 10001 thru 10030   *c; S/N 10001 thru 10280   *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130   *d; S/N 10001 thru 10480

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Ref. No. or Q'ty	Part No.	SP	Description
R305	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R306	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R307	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R309	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R310	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R311	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R312	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R313	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R314	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R315	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R316	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R317	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R318	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R319	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R320	1-216-031-00	s	METAL, CHIP 180 5% 1/10W
R321	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R322	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R324	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R325	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R326	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R328	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R329	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R330	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R332	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R333	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R334	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R336	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R337	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R338	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R340	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R341	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R345	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R346	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R349	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R350	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R351	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R352	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R353	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R354	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R355	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R356	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R357	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R358	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R359	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R360	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R361	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R362	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R363	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R364	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R366	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R367	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R368	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R370	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R371	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R372	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R373	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R375	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R376	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R377	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R378	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R379	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R380	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R381	⚠1-216-365-00	s	METAL 0.47 5% 2W
R383	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R384	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R385	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R387	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R388	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R389	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R390	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R392	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R393	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R394	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R395	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R396	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R397	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R398	⚠1-216-365-00	s	METAL 0.47 5% 2W
R399	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R400	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R401	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R402	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R403	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R404	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R405	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R406	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R407	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R408	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R409	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R410	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R411	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R412	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R413	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R414	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R415	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R416	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R417	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R418	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R419	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R420	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R421	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R422	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R423	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R424	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R425	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R426	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R427	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R428	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R429	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R430	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R431	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R432	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R433	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R434	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R435	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R436	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R437	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R438	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R439	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(SS-49A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R440	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R441	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R442	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R443	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R444	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R445	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R446	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R447	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R448	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R449	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R450	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R451	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R452	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R453	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R454	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R455	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R456	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R457	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R458	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R459	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R460	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R461	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R462	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R463	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R464	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R465	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R466	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R467	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R468	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R469	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R470	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R471	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R472	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R473	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R474	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R475	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R476	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R477	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R478	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R479	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R480	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R481	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R482	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R483	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R485	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R486	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R487	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R488	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R489	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R490	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R491	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R492	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R493	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R494	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R495	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R496	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R497	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R498	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R499	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W

(SS-49A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R531	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R532	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R533	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R535	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
*a	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R536	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
*a	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R537	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R538	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R539	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
*a	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R540	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R541	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R542	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R543	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R544	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R546	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R548	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R549	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
*a	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R550	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R551	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R552	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R553	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R554	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R555	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R556	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R557	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R558	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R559	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R560	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R561	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R562	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R563	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R568	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
*a	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R569	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
*a	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R570	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R571	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R572	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R573	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R574	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R575	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R576	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R577	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R578	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R600	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R601	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R602	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R603	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R604	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R605	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R606	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R607	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R609	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R610	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R616	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R617	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(SS-49A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R618	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R632	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R633	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R634	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R635	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R636	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R637	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R638	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R640	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R641	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R642	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R643	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R644	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R646	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R647	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R648	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R650	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R651	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R652	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
RB101	1-235-196-00	s	RES BLOCK 100K x8
RB301	1-235-195-00	s	RES BLOCK 10K x8
RV101	1-238-020-11	s	RES, ADJ, CARBON 100K
RV102	1-228-477-00	s	RES, ADJ, METAL 100K
RV301	1-241-136-11	s	RES, ADJ, CARBON 10K
RV302	1-241-136-11	s	RES, ADJ, CARBON 10K
RV303	1-241-119-11	s	RES, ADJ, CARBON 1K
RV304	1-241-119-11	s	RES, ADJ, CARBON 1K
RV305	1-241-136-11	s	RES, ADJ, CARBON 10K
RV500	1-241-136-11	s	RES, ADJ, CARBON 10K
RV502	1-241-136-11	s	RES, ADJ, CARBON 10K
RV503	1-241-136-11	s	RES, ADJ, CARBON 10K
S101	1-570-623-11	s	SWITCH, DIP 8-CKT
X101	1-567-962-11	s	CRYSTAL 8.00MHz
X301	1-567-192-11	s	RESONATOR, CERAMIC 4.00MHz

VM-12P BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-317-A	o	MOUNTED CIRCUIT BOARD, VM-12P
1pc	X-3166-759-1	o	SHIELD (B) ASS'Y, VM BOARD
1pc	3-173-466-01	o	SHEET, INSULATING, VM BOARD
1pc	3-173-489-01	o	SHIELD (A), VM BOARD
1pc	3-177-646-01	o	SHIELD (C), VM BOARD
C10	1-124-584-00	s	ELECT 100uF 20% 10V
C13	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C16	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C17	1-124-589-11	s	ELECT 47uF 20% 16V
C30	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C31	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C34	1-163-110-00	s	CERAMIC, CHIP 51pF 5% 50V
C35	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C37	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C38	1-124-589-11	s	ELECT 47uF 20% 16V
C39	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C50	1-124-584-00	s	ELECT 100uF 20% 10V
C51	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C52	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C53	1-124-589-11	s	ELECT 47uF 20% 16V
C54	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C100	1-131-350-00	s	TANTALUM 3.3uF 10% 35V
C101	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
*a	Not in use.		
C102	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C103	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C104	1-124-584-00	s	ELECT 100uF 20% 10V
C105	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C106	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C107	1-124-584-00	s	ELECT 100uF 20% 10V
C108	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C109	1-163-079-00	s	CERAMIC, CHIP 0.039uF 10% 25V
*d	1-162-637-11	s	CERAMIC, CHIP 0.47uF 16V
C110	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C120	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C121	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C122	1-124-584-00	s	ELECT 100uF 20% 10V
C123	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C124	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C125	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C126	1-124-584-00	s	ELECT 100uF 20% 10V
C127	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C128	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C130	1-131-345-00	s	TANTALUM 0.47uF 10% 35V
C140	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C141	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C142	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C143	1-163-105-00	s	CERAMIC, CHIP 33pF 5% 50V
C144	1-163-105-00	s	CERAMIC, CHIP 33pF 5% 50V
C145	1-126-301-11	s	ELECT 1uF 20% 50V
C190	1-124-638-11	s	ELECT 22uF 20% 10V
C191	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C192	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C193	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C194	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C195	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C200	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C201	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C202	1-126-301-11	s	ELECT 1uF 20% 50V

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(VM-12P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C203	1-124-589-11	s	ELECT 47uF 20% 16V
C220	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
*i	1-163-105-00	s	CERAMIC, CHIP 33pF 5% 50V
*b	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C230	1-126-157-11	s	ELECT 10uF 20% 16V
C231	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
*b	Change 3300pF -> 0.01uF.		
C232	1-126-162-11	s	ELECT 3.3uF 20% 50V
C234	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
*c	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C235	1-163-014-00	s	CERAMIC, CHIP 2700pF 5% 50V
*c	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C236	1-163-098-00	s	CERAMIC, CHIP 16pF 5% 50V
C237	1-131-350-00	s	TANTALUM 3.3uF 10% 35V
*a	1-124-584-00	s	ELECT 100uF 20% 10V
C250	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C251	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C252	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C253	1-164-161-11	s	CERAMIC, CHIP 2200pF 10% 100V
C254	1-124-589-11	s	ELECT 47uF 20% 16V
C255	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C256	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C257	1-131-347-00	s	TANTALUM 1uF 10% 35V
C258	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C270	1-124-589-11	s	ELECT 47uF 20% 16V
C271	1-163-127-00	s	CERAMIC, CHIP 270pF 5% 50V
C272	1-163-139-00	s	CERAMIC, CHIP 820pF 5% 50V
C290	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C291	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C292	1-124-584-00	s	ELECT 100uF 20% 10V
C293	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C300	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C301	1-124-589-11	s	ELECT 47uF 20% 16V
C302	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C303	1-124-589-11	s	ELECT 47uF 20% 16V
C304	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C305	1-124-589-11	s	ELECT 47uF 20% 16V
C306	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C307	1-124-589-11	s	ELECT 47uF 20% 16V
C308	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C309	1-124-589-11	s	ELECT 47uF 20% 16V
C310	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C311	1-124-589-11	s	ELECT 47uF 20% 16V
C312	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C313	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C314	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C315	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C316	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C317	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C350	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C351	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C400	1-124-584-00	s	ELECT 100uF 20% 10V
C401	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C488	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C489	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C490	1-124-589-11	s	ELECT 47uF 20% 16V
C491	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C492	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C493	1-124-584-00	s	ELECT 100uF 20% 10V

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Ref. No. or Q'ty	Part No.	SP	Description
C494	1-124-584-00	s	ELECT 100uF 20% 10V
C495	1-124-584-00	s	ELECT 100uF 20% 10V
C496	1-124-584-00	s	ELECT 100uF 20% 10V
C497	1-124-584-00	s	ELECT 100uF 20% 10V
C498	1-124-584-00	s	ELECT 100uF 20% 10V
C499	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C551	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
*b	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C552	1-163-105-00	s	CERAMIC, CHIP 33pF 5% 50V
*b	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C555	1-163-105-00	s	CERAMIC, CHIP 33pF 5% 50V
*b	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C590	1-124-589-11	s	ELECT 47uF 20% 16V
C591	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C592	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C593	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C594	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C595	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C610	1-131-344-00	s	TANTALUM 0.33uF 10% 35V
C611	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C620	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V
C621	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C622	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C623	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C624	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C665	1-124-589-11	s	ELECT 47uF 20% 16V
C710	1-163-023-00	s	CERAMIC, CHIP 0.015uF 10% 50V
C711	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C712	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C713	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C720	1-131-345-00	s	TANTALUM 0.47uF 10% 35V
C750	1-131-347-00	s	TANTALUM 1uF 10% 35V
C990	1-124-589-11	s	ELECT 47uF 20% 16V
C991	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C992	1-126-375-11	s	ELECT 100uF 20% 25V
C993	1-126-162-11	s	ELECT 3.3uF 20% 50V
CN701 Y	1-564-019-41	o	CONNECTOR, 9P, MALE
CN702 Y	1-506-470-11	s	CONNECTOR, 5P, MALE
CN710 W	1-562-887-11	s	CONNECTOR, FPC 20P, FEMALE
CV140	1-141-227-00	s	CAP, TRIMMER 20pF
CV230	1-141-227-00	s	CAP, TRIMMER 20pF
CV550	1-141-260-00	s	CAP, TRIMMER 50pF
*b	1-141-227-00	s	CAP, TRIMMER 20pF
CV620	1-141-227-00	s	CAP, TRIMMER 20pF
D140	8-719-949-46	s	DIODE 1T32
D230	8-713-300-88	s	DIODE 1T33C-01
D250	8-719-104-34	s	DIODE 1S2836
D400	8-719-104-34	s	DIODE 1S2836
D401	8-719-104-34	s	DIODE 1S2836
D510	8-719-104-34	s	DIODE 1S2836
D511	8-719-104-34	s	DIODE 1S2836
D512	8-719-104-34	s	DIODE 1S2836
D620	8-713-300-88	s	DIODE 1T33C-01
D710	8-719-104-34	s	DIODE 1S2836
D720	8-719-104-34	s	DIODE 1S2836
FB1A	1-410-858-21	o	BEADS, FERRITE
FB2A	1-410-858-21	o	BEADS, FERRITE

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

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Ref. No. or Q'ty	Part No.	SP	Description
FB3A	1-410-858-21	o	BEADS, FERRITE
FL10	1-235-759-11	s	FILTER, LOW-PASS
FL30	1-235-181-00	s	FILTER, BANDPASS 4.43MHz
IC100	8-752-334-55	s	IC CXD1175AM
IC120	8-752-334-55	s	IC CXD1175AM
IC130	8-759-239-23	s	IC TC74HC86AF
IC131	8-759-925-76	s	IC SN74HC08ANS
IC160	8-759-987-17	s	IC CXD1226Q
IC161	8-759-925-85	s	IC SN74HC32ANS
IC200	8-759-987-20	s	IC CXD1229Q
IC250	8-759-009-51	s	IC MC14538BF
IC251	8-759-925-90	s	IC SN74HC74ANS
IC252	8-759-009-51	s	IC MC14538BF
IC253	8-759-925-90	s	IC SN74HC74ANS
IC254	8-759-927-46	s	IC SN74HC00ANS
IC255	8-759-926-23	s	IC SN74HC163ANS
IC256	8-759-927-46	s	IC SN74HC00ANS
IC257	8-759-300-71	s	IC HD14053BFP
IC300	8-752-340-75	s	IC CXK1206AM
IC301	8-752-340-75	s	IC CXK1206AM
IC302	8-752-340-75	s	IC CXK1206AM
IC303	8-752-340-75	s	IC CXK1206AM
IC304	8-752-340-75	s	IC CXK1206AM
IC305	8-752-340-75	s	IC CXK1206AM
IC350	8-759-927-46	s	IC SN74HC00ANS
IC351	8-759-926-29	s	IC SN74HC175ANS
IC352	8-759-009-51	s	IC MC14538BF
IC353	8-759-925-90	s	IC SN74HC74ANS
IC354	8-759-925-90	s	IC SN74HC74ANS
IC400	8-759-987-18	s	IC CXD1227Q
IC420	8-752-032-96	s	IC CXA1106M
IC440	8-752-032-96	s	IC CXA1106M
IC500	8-759-987-19	s	IC CXD1228Q
IC600	8-759-925-90	s	IC SN74HC74ANS
IC601	8-759-926-23	s	IC SN74HC163ANS
IC602	8-759-926-23	s	IC SN74HC163ANS
IC603	8-759-926-23	s	IC SN74HC163ANS
IC604	8-759-925-74	s	IC SN74HC04ANS
IC710	8-759-239-55	s	IC TC74HC123AF
IC711	8-759-009-51	s	IC MC14538BF
IC750	8-759-926-56	s	IC SN74HC273ANS
IC751	8-759-925-74	s	IC SN74HC04ANS
IC752	8-759-927-46	s	IC SN74HC00ANS
IC753	8-759-925-76	s	IC SN74HC08ANS
IC754	8-759-925-90	s	IC SN74HC74ANS
IC990	8-759-521-23	s	IC PQ05RF2V
L10	1-408-408-00	s	INDUCTOR 8.2uH
L12	1-410-482-31	s	INDUCTOR 100uH
L30	1-408-408-00	s	INDUCTOR 8.2uH
L31	1-410-482-31	s	INDUCTOR 100uH
L50	1-410-482-31	s	INDUCTOR 100uH
L100	1-410-482-31	s	INDUCTOR 100uH
L120	1-410-482-31	s	INDUCTOR 100uH
L140	1-410-460-11	s	INDUCTOR 1.5uH
L190	1-410-478-11	s	INDUCTOR 47uH
L230	1-410-466-41	s	INDUCTOR 4.7uH
L250	1-410-482-31	s	INDUCTOR 100uH

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Ref. No. or Q'ty	Part No.	SP	Description
L270	1-408-423-00	s	INDUCTOR 150uH
L290	1-410-482-31	s	INDUCTOR 100uH
L300	1-410-478-11	s	INDUCTOR 47uH
L301	1-410-478-11	s	INDUCTOR 47uH
L302	1-410-478-11	s	INDUCTOR 47uH
L303	1-410-478-11	s	INDUCTOR 47uH
L304	1-410-478-11	s	INDUCTOR 47uH
L305	1-410-478-11	s	INDUCTOR 47uH
L490	1-410-478-11	s	INDUCTOR 47uH
L491	1-408-425-00	s	INDUCTOR 220uH
L492	1-408-425-00	s	INDUCTOR 220uH
L590	1-410-478-11	s	INDUCTOR 47uH
Q10	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q12	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q20	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q21	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q30	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q31	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q32	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q33	8-729-202-38	s	TRANSISTOR 2SC3326N
Q50	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q51	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q100	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q120	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q140	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q141	8-729-122-63	s	TRANSISTOR 2SA1226
Q200	8-729-202-38	s	TRANSISTOR 2SC3326N
Q210	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q214	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q270	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q271	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q550	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q551	8-729-122-63	s	TRANSISTOR 2SA1226
Q620	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q621	8-729-140-47	s	TRANSISTOR 2SC3735-L-B35
Q720	8-729-901-01	s	TRANSISTOR DTC144EK
R10	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R11	Deleted.		
*d	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R11A	1-215-423-00	s	METAL 1.2K 1% 1/4W
*d	Not in use.		
R12	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R13	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R14	1-216-039-00	s	METAL, CHIP 390 5% 1/10W
R15	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R19	1-216-295-00	s	METAL, CHIP 0
R20	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R21	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R23A	1-249-432-11	s	CARBON 18K 5% 1/4W
*d	Not in use.		
R24A	1-249-429-11	s	CARBON 10K 5% 1/4W
*d	Not in use.		
R30	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R31	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R32	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R33	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R34	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R35	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(VM-12P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R36	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R37	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R38	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R39	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R40	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R41	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R42	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R50	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R51	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R52	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R53	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R54	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R55	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R100	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R101	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R102	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R103	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R104	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R105	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
*d	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R106	1-216-119-00	s	METAL, CHIP 820K 5% 1/10W
R107	1-216-111-00	s	METAL, CHIP 390K 5% 1/10W
R108	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R109	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R110A	1-215-473-00	s	METAL 150K 1% 1/4W
*d	Not in use.		
R120	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R121	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R122	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R123	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R124	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R125	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R126	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R130	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R131	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W
R132	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R140	1-216-119-00	s	METAL, CHIP 820K 5% 1/10W
R141	1-216-111-00	s	METAL, CHIP 390K 5% 1/10W
R142	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R143	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R144	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R145	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R146	1-216-011-00	s	METAL, CHIP 27 5% 1/10W
R147	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R148	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R149	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R150	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R151	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R153	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R154	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R161	1-216-295-00	s	METAL, CHIP 0
R162	1-216-295-00	s	METAL, CHIP 0
R165	1-216-295-00	s	METAL, CHIP 0
R166A	1-249-417-11	s	CARBON 1K 5% 1/4W
*c	Not in use.		
R200	1-216-117-00	s	METAL, CHIP 680K 5% 1/10W
R201	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R202	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R203	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W

(VM-12P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R204	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R205	1-216-019-00	s	METAL, CHIP 56 5% 1/10W
R206	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R220	1-216-681-11	s	METAL, CHIP 18K 0.5% 1/10W
*e	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
*b	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R230	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R231	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R232	Deleted.		
*c	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R233	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R234	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
*d	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R235	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R236	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R237	1-216-117-00	s	METAL, CHIP 680K 5% 1/10W
*a	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R238	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R240	1-216-295-00	s	METAL, CHIP 0
R250	1-216-691-11	s	METAL, CHIP 47K 0.5% 1/10W
R251	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R253	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R255	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R256	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R259	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R260	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R270	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R271	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R272	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R273	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R274	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R275	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R351	1-216-295-00	s	METAL, CHIP 0
R353	1-216-295-00	s	METAL, CHIP 0
R355	1-216-295-00	s	METAL, CHIP 0
R356	1-216-691-11	s	METAL, CHIP 47K 0.5% 1/10W
R357	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R358	1-216-295-00	s	METAL, CHIP 0
R361	1-216-295-00	s	METAL, CHIP 0
R400	1-216-295-00	s	METAL, CHIP 0
R403	1-216-295-00	s	METAL, CHIP 0
R404	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R405	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R406	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R407	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
*a	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R408	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R409	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
*a	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R410	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R411	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R412	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R413	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R414	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R415	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R416	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R501	1-216-295-00	s	METAL, CHIP 0
R503	1-216-295-00	s	METAL, CHIP 0
R505	1-216-295-00	s	METAL, CHIP 0

NOTES: *a; S/N 10001 thru 10030
*b; S/N 10001 thru 10130
*c; S/N 10001 thru 10280
*d; S/N 10001 thru 10480
*e; S/N 10131 thru 10280

(VM-12P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R510	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R511	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R512	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R513	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R514	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R515	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R516	1-216-295-00	s	METAL, CHIP 0
R517	1-216-295-00	s	METAL, CHIP 0
R518	1-216-295-00	s	METAL, CHIP 0
R519	1-216-295-00	s	METAL, CHIP 0
R520	1-216-295-00	s	METAL, CHIP 0
R521	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R522	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R523	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R550	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R551	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R552	1-216-011-00	s	METAL, CHIP 27 5% 1/10W
R556	1-216-295-00	s	METAL, CHIP 0
R557	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R558	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R559	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R605	1-216-295-00	s	METAL, CHIP 0
R610	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R611	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R620	1-216-658-11	s	METAL, CHIP 2K 0.5% 1/10W
R621	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R622	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R623	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W
R624	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R625	1-216-638-11	s	METAL, CHIP 300 0.5% 1/10W
R626	1-216-692-11	s	METAL, CHIP 51K 0.5% 1/10W
R627	1-216-648-11	s	METAL, CHIP 750 0.5% 1/10W
R672	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R700	1-216-295-00	s	METAL, CHIP 0
R703	1-216-295-00	s	METAL, CHIP 0
R705	1-216-295-00	s	METAL, CHIP 0
R707	1-216-295-00	s	METAL, CHIP 0
R708	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R709	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R710	1-216-101-00	s	METAL, CHIP 150K 5% 1/10W
R711	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R712	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R713	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R720	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W
R721	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R722	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R723	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R750	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R751	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R752	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R990	1-216-063-00	s	METAL, CHIP 3.9K 5% 1/10W
R991	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
X301	1-579-057-11	s	CRYSTAL 17.734475MHz
X550	1-577-704-11	s	CRYSTAL 14.21875MHz
X620	1-579-057-11	s	CRYSTAL 17.734475MHz

VO-37A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-318-A	o	MOUNTED CIRCUIT BOARD, VO-37A
1pc	3-168-157-01	o	BRACKET (R), VO BOARD
1pc	3-168-158-01	o	BRACKET (L), VO BOARD
1pc	3-173-464-01	o	SHIELD (A), VO BOARD
1pc	3-173-465-01	o	SHIELD (B), VO BOARD
1pc	3-659-918-01	o	HEAT SINK, IC (for IC1)
3pcs	3-703-353-08	o	SUPPORTER, PC BOARD
1pc	7-682-547-04	s	SCREW +B 3x6 (for IC1)
2pcs	7-682-903-11	s	SCREW +PWH 3x6
C1	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C2	1-126-516-11	s	ELECT 120uF 20% 16V
C3	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C4	1-126-516-11	s	ELECT 120uF 20% 16V
C5	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C6	1-124-589-11	s	ELECT 47uF 20% 16V
C30	1-124-584-00	s	ELECT 100uF 20% 10V
C31	1-124-584-00	s	ELECT 100uF 20% 10V
C101	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
*b	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C102	1-163-135-00	s	CERAMIC, CHIP 560pF 5% 50V
C103	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C104	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C105	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C106	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C107	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C108	1-124-638-11	s	ELECT 22uF 20% 10V
C109	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C110	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C111	1-124-257-00	s	ELECT 2.2uF 20% 50V
C112	1-126-163-11	s	ELECT 4.7uF 20% 50V
C113	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C114	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C115	1-124-442-00	s	ELECT 330uF 20% 6.3V
C116	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C117	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C118	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C119	1-124-589-11	s	ELECT 47uF 20% 16V
C120	1-124-257-00	s	ELECT 2.2uF 20% 50V
C121	1-124-589-11	s	ELECT 47uF 20% 16V
C122	1-126-163-11	s	ELECT 4.7uF 20% 50V
C123	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C125	1-163-136-00	s	CERAMIC, CHIP 620pF 5% 50V
C126	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C127	1-124-257-00	s	ELECT 2.2uF 20% 50V
C128	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C129	1-163-131-00	s	CERAMIC, CHIP 390pF 5% 50V
C130	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C131	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C132	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C133	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C134	1-163-139-00	s	CERAMIC, CHIP 820pF 5% 50V
C135A	1-124-465-00	s	ELECT 0.47uF 20% 50V
*b	Not in use.		
C136	1-124-589-11	s	ELECT 47uF 20% 16V
C137	1-124-589-11	s	ELECT 47uF 20% 16V
C141	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C142	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C143	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C145	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C146	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C147	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C148	1-124-589-11	s	ELECT 47uF 20% 16V
C149	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C150	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C151	1-124-589-11	s	ELECT 47uF 20% 16V
C152	1-163-257-11	s	CERAMIC, CHIP 180pF 5% 50V
C153	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C154	1-124-589-11	s	ELECT 47uF 20% 16V
C155	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
*b	Not in use.		
C156	1-163-257-11	s	CERAMIC, CHIP 180pF 5% 50V
C157	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C158	1-163-108-00	s	CERAMIC, CHIP 43pF 5% 50V
C160	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C161	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C162	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C163	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C164	1-163-091-00	s	CERAMIC, CHIP 8pF 50V
C165	1-163-099-00	s	CERAMIC, CHIP 18pF 5% 50V
C167	1-163-113-00	s	CERAMIC, CHIP 68pF 5% 50V
C170	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C172	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C173	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C174	1-124-589-11	s	ELECT 47uF 20% 16V
C175	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C180	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C181	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C182	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C201	1-124-589-11	s	ELECT 47uF 20% 16V
C202	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C203	1-124-589-11	s	ELECT 47uF 20% 16V
C204	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C205	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C208	1-163-127-00	s	CERAMIC, CHIP 270pF 5% 50V
C209	1-163-112-00	s	CERAMIC, CHIP 62pF 5% 50V
C211	1-164-491-11	s	CERAMIC, CHIP 300pF 1% 50V
C213	1-124-589-11	s	ELECT 47uF 20% 16V
C214	1-126-163-11	s	ELECT 4.7uF 20% 50V
C215	1-126-163-11	s	ELECT 4.7uF 20% 50V
C216	1-124-589-11	s	ELECT 47uF 20% 16V
C218	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C219	1-124-589-11	s	ELECT 47uF 20% 16V
C220	1-124-589-11	s	ELECT 47uF 20% 16V
C221	1-124-589-11	s	ELECT 47uF 20% 16V
C222	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C223	1-124-589-11	s	ELECT 47uF 20% 16V
C224	1-124-589-11	s	ELECT 47uF 20% 16V
C226	1-124-589-11	s	ELECT 47uF 20% 16V
C227	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C228	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C230	1-124-589-11	s	ELECT 47uF 20% 16V
C231	1-126-163-11	s	ELECT 4.7uF 20% 50V
C232	1-163-115-00	s	CERAMIC, CHIP 82pF 5% 50V
C233	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C234	1-124-589-11	s	ELECT 47uF 20% 16V
C235	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C240	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C242	1-163-257-11	s	CERAMIC, CHIP 180pF 5% 50V

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C243	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C244	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C245	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C246	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C247	1-163-124-00	s	CERAMIC, CHIP 200pF 5% 50V
C249	1-163-113-00	s	CERAMIC, CHIP 68pF 5% 50V
C250	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C251	1-124-589-11	s	ELECT 47uF 20% 16V
C252	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C261	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C262	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C263A	1-162-283-31	s	CERAMIC 120pF 10% 50V
*b	Not in use.		
C302	1-124-589-11	s	ELECT 47uF 20% 16V
C309	1-124-584-00	s	ELECT 100uF 20% 10V
C310	1-124-584-00	s	ELECT 100uF 20% 10V
C311	1-124-589-11	s	ELECT 47uF 20% 16V
C312	1-124-589-11	s	ELECT 47uF 20% 16V
C313	1-124-589-11	s	ELECT 47uF 20% 16V
C314	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C315	1-131-360-00	s	TANTALUM 15uF 10% 25V
*d	1-131-365-00	s	TANTALUM 10uF 10% 20V
C320	1-124-589-11	s	ELECT 47uF 20% 16V
C321	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C322	1-131-351-00	s	TANTALUM 4.7uF 10% 35V
C323	1-124-589-11	s	ELECT 47uF 20% 16V
C324	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C325	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C326	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C327	1-163-089-00	s	CERAMIC, CHIP 6pF 50V
C330	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C331	1-124-589-11	s	ELECT 47uF 20% 16V
C332	1-126-163-11	s	ELECT 4.7uF 20% 50V
C333	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C334	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C335	1-124-589-11	s	ELECT 47uF 20% 16V
C336	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C337	1-124-589-11	s	ELECT 47uF 20% 16V
C340	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C341	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C342	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C343	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C344	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C345	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C346	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C347	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C348	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C349	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C350	1-124-589-11	s	ELECT 47uF 20% 16V
C351	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C352	1-124-584-00	s	ELECT 100uF 20% 10V
*d	1-124-589-11	s	ELECT 47uF 20% 16V
C353	1-124-584-00	s	ELECT 100uF 20% 10V
*d	1-124-589-11	s	ELECT 47uF 20% 16V
C354	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C355	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C356	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C357	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C358	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V

NOTES: *a; S/N 10001 thru 10030
*b; S/N 10001 thru 10130
*c; S/N 10001 thru 10280
*d; S/N 10001 thru 10480
*e; S/N 10131 thru 10280

Ref. No. or Q'ty	Part No.	SP	Description
C359	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C360	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C361	1-163-089-00	s	CERAMIC, CHIP 6pF 50V
C363	1-124-442-00	s	ELECT 330uF 20% 6.3V
C364	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C365	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V
C366	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C370	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C371	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C380	1-124-584-00	s	ELECT 100uF 20% 10V
C381	1-124-584-00	s	ELECT 100uF 20% 10V
C383	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C384	1-124-589-11	s	ELECT 47uF 20% 16V
C385	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C386	1-124-589-11	s	ELECT 47uF 20% 16V
C390	1-124-589-11	s	ELECT 47uF 20% 16V
C391	1-124-589-11	s	ELECT 47uF 20% 16V
C402	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C407	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C408	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C410	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C411	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C413	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C416	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C417	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C418	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C419	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C420	1-124-584-00	s	ELECT 100uF 20% 10V
C422	1-124-584-00	s	ELECT 100uF 20% 10V
*d	1-124-589-11	s	ELECT 47uF 20% 16V
C423A	1-107-077-00	s	MICA 47pF 5% 50V
*c	Not in use.		
C425	1-124-589-11	s	ELECT 47uF 20% 16V
C426	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C427	1-124-589-11	s	ELECT 47uF 20% 16V
C428	1-124-589-11	s	ELECT 47uF 20% 16V
C429	1-124-589-11	s	ELECT 47uF 20% 16V
C430	1-124-589-11	s	ELECT 47uF 20% 16V
C431	1-164-222-11	s	CERAMIC, CHIP 0.22uF 25V
C432	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C433	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C434	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C435	1-126-157-11	s	ELECT 10uF 20% 16V
C436	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C440	1-126-157-11	s	ELECT 10uF 20% 16V
C441	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C450	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C451	1-163-108-00	s	CERAMIC, CHIP 43pF 5% 50V
C452	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C453	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C454	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C455	1-126-157-11	s	ELECT 10uF 20% 16V
C460	1-124-584-00	s	ELECT 100uF 20% 10V
C461	1-131-377-00	s	TANTALUM 10uF 10% 10V
*d	1-131-349-00	s	TANTALUM 2.2uF 10% 35V
C471	1-124-584-00	s	ELECT 100uF 20% 10V
C472	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C473	1-124-589-11	s	ELECT 47uF 20% 16V
C480	1-124-589-11	s	ELECT 47uF 20% 16V

Ref. No. or Q'ty	Part No.	SP	Description
C481	1-124-257-00	s	ELECT 2.2uF 20% 50V
C482	1-124-584-00	s	ELECT 100uF 20% 10V
C483	1-124-584-00	s	ELECT 100uF 20% 10V
C488	1-124-584-00	s	ELECT 100uF 20% 10V
C489	1-124-471-00	s	ELECT 1000uF 20% 6.3V
C491	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C492	1-126-925-11	s	ELECT 470uF 20% 10V
*a	Change 47uF -> 470uF.		
C493	1-124-471-00	s	ELECT 1000uF 20% 6.3V
C494	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C495	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C496	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C497	1-126-157-11	s	ELECT 10uF 20% 16V
C498	1-124-584-00	s	ELECT 100uF 20% 10V
C499	1-124-471-00	s	ELECT 1000uF 20% 6.3V
CN201 B	1-506-471-11	s	CONNECTOR, 6P, MALE
CN202 W	------------	-	HARNESS (RP PB)
CN203 B	1-506-475-11	s	CONNECTOR, 10P, MALE
CN206 W	------------	-	HARNESS (RP FSC)
CN207 W	------------	-	HARNESS (RP REC)
CN208 W	------------	-	HARNESS (RP-VO)
CN211 W	1-562-992-11	o	CONNECTOR, FPC 26P, FEMALE
CN221 W	1-506-474-11	s	CONNECTOR, 9P, MALE
CN222 Y	1-506-470-11	s	CONNECTOR, 5P, MALE
CN231 Y	1-506-470-11	s	CONNECTOR, 5P, MALE
CN232 Y	1-506-473-11	s	CONNECTOR, 8P, MALE
D10	8-719-400-18	s	DIODE MA152WK
D101	8-719-400-18	s	DIODE MA152WK
D102A	8-719-104-10	s	DIODE 1SS99
*c	Not in use.		
D103	8-719-400-18	s	DIODE MA152WK
D130A	8-719-911-19	s	DIODE 1SS119
*b	Not in use.		
D201	8-719-400-18	s	DIODE MA152WK
D202	8-719-400-18	s	DIODE MA152WK
D301	8-719-400-18	s	DIODE MA152WK
D401A	8-719-911-19	s	DIODE 1SS119
DL201	1-415-677-11	s	DELAY LINE 370nS
DL301	1-415-559-11	s	DELAY LINE 600nS
FL101	1-236-911-11	s	FILTER, LOW-PASS
FL201	1-236-716-11	s	FILTER, LOW-PASS
FL301	1-239-085-11	s	FILTER, LOW-PASS
FL302	1-239-085-11	s	FILTER, LOW-PASS
IC1	8-759-982-10	s	IC RC7809FA
IC10	8-759-038-46	s	IC SC7S00F
IC101	8-759-420-64	s	IC AN3237FB
IC102	8-759-710-07	s	IC NJM2234M
IC201	8-759-710-07	s	IC NJM2234M
IC202	8-759-051-54	s	IC VC2076MP
IC203	8-759-710-86	s	IC NJM2233BM
IC302	8-759-710-86	s	IC NJM2233BM
IC303	8-752-334-55	s	IC CXD1175AM
IC304	8-752-342-61	s	IC CXD2105AQ
IC306	8-759-710-07	s	IC NJM2234M
IC402	8-759-710-07	s	IC NJM2234M
IC403	8-759-710-07	s	IC NJM2234M
IC404	8-759-710-86	s	IC NJM2233BM

NOTES: *a; S/N 10001 thru 10030   *c; S/N 10001 thru 10280   *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130   *d; S/N 10001 thru 10480

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Ref. No. or Q'ty	Part No.	SP	Description
IC405	8-759-710-07	s	IC NJM2234M
IC406	8-759-710-07	s	IC NJM2234M
IC407	8-759-710-07	s	IC NJM2234M
IC440	8-759-925-60	s	IC BA401
IC441	8-759-925-60	s	IC BA401
IC442	8-752-039-13	s	IC CXA1413L
IC491	8-759-057-43	s	IC MC14576BF
IC492	8-759-057-40	s	IC MC14577BF
L1	1-410-482-31	s	INDUCTOR 100uH
L101	1-408-420-00	s	INDUCTOR 82uH
L102	1-410-482-31	s	INDUCTOR 100uH
L103	1-410-482-31	s	INDUCTOR 100uH
L105	1-408-416-00	s	INDUCTOR 39uH
L106	1-408-416-00	s	INDUCTOR 39uH
L108	1-410-473-11	s	INDUCTOR 18uH
L109	1-410-482-31	s	INDUCTOR 100uH
L110	1-410-482-31	s	INDUCTOR 100uH
L111	1-410-478-11	s	INDUCTOR 47uH
L112	1-408-416-00	s	INDUCTOR 39uH
L115	1-408-411-00	s	INDUCTOR 15uH
L116	1-408-411-00	s	INDUCTOR 15uH
L117	1-410-478-11	s	INDUCTOR 47uH
L118	1-410-482-31	s	INDUCTOR 100uH
L120	1-408-416-00	s	INDUCTOR 39uH
L121	1-408-423-00	s	INDUCTOR 150uH
L122A	1-408-413-00	s	INDUCTOR 22uH
*b	Not in use.		
L201	1-410-482-31	s	INDUCTOR 100uH
L202	1-410-482-31	s	INDUCTOR 100uH
L210	1-410-489-11	s	INDUCTOR 390uH
L213	1-408-423-00	s	INDUCTOR 150uH
L215	1-410-482-31	s	INDUCTOR 100uH
L301	1-410-482-31	s	INDUCTOR 100uH
L302	1-410-482-31	s	INDUCTOR 100uH
L310	1-410-482-31	s	INDUCTOR 100uH
L311	1-410-470-11	s	INDUCTOR 10uH
L312	1-410-471-11	s	INDUCTOR 12uH
L320	1-408-420-00	s	INDUCTOR 82uH
L440	1-408-423-00	s	INDUCTOR 150uH
*a	1-410-473-11	s	INDUCTOR 18uH
L441	1-408-414-00	s	INDUCTOR 27uH
L444	1-410-482-31	s	INDUCTOR 100uH
L490	1-410-482-31	s	INDUCTOR 100uH
Q10	8-729-901-06	s	TRANSISTOR DTA144EK
Q11	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q12	8-729-901-01	s	TRANSISTOR DTC144EK
Q13	8-729-901-01	s	TRANSISTOR DTC144EK
Q14	8-729-901-06	s	TRANSISTOR DTA144EK
Q15	8-729-901-01	s	TRANSISTOR DTC144EK
Q16	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q17	8-729-901-06	s	TRANSISTOR DTA144EK
Q19	8-729-901-06	s	TRANSISTOR DTA144EK
Q20	8-729-901-01	s	TRANSISTOR DTC144EK
Q21	8-729-901-01	s	TRANSISTOR DTC144EK
Q22	8-729-901-01	s	TRANSISTOR DTC144EK
Q30	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q31	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q32	8-729-230-49	s	TRANSISTOR 2SC2712-YG

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Ref. No. or Q'ty	Part No.	SP	Description
Q40	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q41	8-729-202-38	s	TRANSISTOR 2SC3326N
Q101	8-729-901-01	s	TRANSISTOR DTC144EK
Q102	8-729-901-01	s	TRANSISTOR DTC144EK
Q103	8-729-901-01	s	TRANSISTOR DTC144EK
Q104	8-729-901-01	s	TRANSISTOR DTC144EK
Q105	8-729-901-01	s	TRANSISTOR DTC144EK
Q106	8-729-901-01	s	TRANSISTOR DTC144EK
Q107	8-729-901-01	s	TRANSISTOR DTC144EK
Q108	8-729-901-01	s	TRANSISTOR DTC144EK
Q109	8-729-901-01	s	TRANSISTOR DTC144EK
Q110	8-729-901-01	s	TRANSISTOR DTC144EK
Q111	8-729-901-01	s	TRANSISTOR DTC144EK
Q112	8-729-901-01	s	TRANSISTOR DTC144EK
Q113	8-729-901-01	s	TRANSISTOR DTC144EK
Q114	8-729-901-01	s	TRANSISTOR DTC144EK
Q116	8-729-901-01	s	TRANSISTOR DTC144EK
Q118	8-729-901-06	s	TRANSISTOR DTA144EK
Q119	8-729-901-06	s	TRANSISTOR DTA144EK
Q120	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q121	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q122	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q123	8-729-901-06	s	TRANSISTOR DTA144EK
Q124	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q125	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q126	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q128	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q130	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q131	8-729-901-06	s	TRANSISTOR DTA144EK
Q140	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q141	8-729-901-01	s	TRANSISTOR DTC144EK
Q150A	8-729-900-89	s	TRANSISTOR DTC144ES
*c	Not in use.		
Q151A	8-729-900-89	s	TRANSISTOR DTC144ES
*c	Not in use.		
Q201	8-729-901-01	s	TRANSISTOR DTC144EK
Q203	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q204	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q205	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q206	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q207	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q208	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q209	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q210	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q211	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q212	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q213	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q214	8-729-901-06	s	TRANSISTOR DTA144EK
Q215	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q216	8-729-901-01	s	TRANSISTOR DTC144EK
Q261	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q262	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q304	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q305	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q306	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q310	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q311	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q312	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q313	8-729-901-01	s	TRANSISTOR DTC144EK

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

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Ref. No. or Q'ty	Part No.	SP	Description
Q314	8-729-901-01	s	TRANSISTOR DTC144EK
Q320	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q323	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q324	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q326	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q327	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q328	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q329	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q333	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q334	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q335	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q336	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q337	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q339	8-729-202-38	s	TRANSISTOR 2SC3326N
Q402	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q420	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q421	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q430	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q431	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q432	8-729-903-97	s	TRANSISTOR FMS1FE
Q433	8-729-903-97	s	TRANSISTOR FMS1FE
Q434	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q435	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q438	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q439	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q440	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q480	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q481	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q482	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q483	8-729-230-49	s	TRANSISTOR 2SC2712-YG
R10	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R11	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R12	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R13	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R14	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R15	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R20	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R21	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R22	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R30	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R31	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R32	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R33	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R34	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R35	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R36	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R37	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R41	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R42	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R43	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R50	1-216-295-00	s	METAL, CHIP 0
R52	Deleted.		
*c	1-216-295-00	s	METAL, CHIP 0
R101	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R102	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R103	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R104	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
*b	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R105	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R106	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R107	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R108	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R109	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R110	1-216-638-11	s	METAL, CHIP 300 0.5% 1/10W
*b	1-216-636-11	s	METAL, CHIP 240 0.5% 1/10W
R111	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R112	1-216-115-00	s	METAL, CHIP 560K 5% 1/10W
R114	Deleted.		
*c	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R114A	1-247-887-00	s	CARBON 220K 5% 1/4W
*c	Not in use.		
R115	1-216-129-00	s	METAL, CHIP 2.2M 5% 1/10W
R116	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R117	1-216-668-11	s	METAL, CHIP 5.1K 0.5% 1/10W
R118	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R119	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R120	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R121	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R122	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R123	1-216-640-11	s	METAL, CHIP 360 0.5% 1/10W
*b	1-216-638-11	s	METAL, CHIP 300 0.5% 1/10W
R124	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R125	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R126	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R127	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R128	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R129	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R130	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
*b	1-216-637-11	s	METAL, CHIP 270 0.5% 1/10W
R132	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
*c	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R135	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R136	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R137A	1-249-429-11	s	CARBON 10K 5% 1/4W
*b	Not in use.		
R138	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R139	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R140	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W
R141	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R142	1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W
R143	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W
*c	Change 22K -> 27K.		
R144	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R145	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R146	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R148	1-216-654-11	s	METAL, CHIP 1.3K 0.5% 1/10W
R151	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R152	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R155	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R156	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R157	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R158	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R159	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R160	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R161	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R162	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R163	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R164	1-216-295-00	s	METAL, CHIP 0

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R165	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R166	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R168	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R169	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R170	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R171	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R172	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R173	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R174	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R175	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R176	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R177	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R178	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R179	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R181	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R182	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R183	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R184	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R185	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R186	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R187	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R188	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R190A	1-249-429-11	s	CARBON 10K 5% 1/4W
*c	Not in use.		
R196	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R197	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R201	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R202	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R203	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R205	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R207	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R208	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R209	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R210	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R211	1-216-295-00	s	METAL, CHIP 0
R213	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R214	1-216-295-00	s	METAL, CHIP 0
R217	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R218	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R219	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R220	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R221	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R222	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R223	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R224	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R225	1-216-656-11	s	METAL, CHIP 1.6K 0.5% 1/10W
R226	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R227	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R228	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R229	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R230	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R232	1-216-063-00	s	METAL, CHIP 3.9K 5% 1/10W
R235	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R250	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R251	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R252	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R253	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R254	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R255	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R256	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R257	1-216-039-00	s	METAL, CHIP 390 5% 1/10W
R258	1-216-642-11	s	METAL, CHIP 430 0.5% 1/10W
R259	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R260	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R261	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R262	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R263	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R264	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R265	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R270	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R271	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R272	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R277	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R278	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R279	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R280	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R281	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R282	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R283	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R284	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R285	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R286	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R287	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R290	1-216-644-11	s	METAL, CHIP 510 0.5% 1/10W
R291	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R293	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R294	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R295	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R296	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R300	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
*d	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R310	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R311	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R312	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
*d	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R313	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R314	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
*d	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R315	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R316	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R317	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R318	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R319	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R320	1-216-669-11	s	METAL, CHIP 5.6K 0.5% 1/10W
R322A	1-215-422-11	s	METAL 1.1K 1% 1/4W
*d	Not in use.		
R323	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R324	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R326	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R327	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R328	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R329	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R330	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R331	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R332	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R333	1-216-627-11	s	METAL, CHIP 100 0.5% 1/10W
R335	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R336	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R337	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R338	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R339	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R340	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R341	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R342	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R343	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R344	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R345	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R346	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R348	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R349	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R350	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R351	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R352	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R353	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R354	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R355	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R356	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R360	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R361	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R362	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R363	1-216-669-11	s	METAL, CHIP 5.6K 0.5% 1/10W
R364	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R366	1-216-650-11	s	METAL, CHIP 910 0.5% 1/10W
R367	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R368	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R369	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R374	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R375	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R376	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R377	1-216-646-11	s	METAL, CHIP 620 0.5% 1/10W
R378	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R379	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R380	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R381	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R382	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R383	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R384	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R385	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R393	1-216-649-11	s	METAL, CHIP 820 0.5% 1/10W
R394	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R395	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R396	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R397	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R398	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R399	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R400	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R401	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R406	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R407	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R408	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R410	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R411	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R415	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R421	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R422	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R423	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R424	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R425	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R426	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R431	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R432	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R440	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R441	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R442	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
*a	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R443	1-216-031-00	s	METAL, CHIP 180 5% 1/10W
R444	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R445	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R446	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R447	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R448	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R449	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R450	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R451	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R452	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R453	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R454	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R455	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R456	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R457	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R458	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R459	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R460	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R461	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R462	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R466	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R467	1-216-648-11	s	METAL, CHIP 750 0.5% 1/10W
*d	1-216-649-11	s	METAL, CHIP 820 0.5% 1/10W
R468	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R469	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R470	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R471	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R472	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R473	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R474	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R475	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R476	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R477	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R478	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R479	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R480	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R481	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R482	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R483	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R484	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R485	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R486	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R487	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R488	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R489A	1-215-441-00	s	METAL 6.8K 1% 1/6W
R490	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R491	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R492	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R493	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R494	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R495	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W

NOTES: *a; S/N 10001 thru 10030
*b; S/N 10001 thru 10130
*c; S/N 10001 thru 10280
*d; S/N 10001 thru 10480
*e; S/N 10131 thru 10280

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Ref. No. or Q'ty	Part No.	SP	Description
R496	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R497	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R498	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R499	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
RV30	1-238-012-11	s	RES, ADJ, CARBON 1K
RV101	1-238-015-11	s	RES, ADJ, CARBON 4.7K
RV102	1-238-016-11	s	RES, ADJ, CARBON 10K
RV103	1-238-016-11	s	RES, ADJ, CARBON 10K
RV104	1-238-017-11	s	RES, ADJ, CARBON 22K
RV105	1-238-012-11	s	RES, ADJ, CARBON 1K
RV106	1-238-017-11	s	RES, ADJ, CARBON 22K
RV107	1-238-017-11	s	RES, ADJ, CARBON 22K
RV108	1-238-017-11	s	RES, ADJ, CARBON 22K
RV109	1-238-015-11	s	RES, ADJ, CARBON 4.7K
RV202	1-238-011-11	s	RES, ADJ, CARBON 470
RV210	1-230-717-11	s	RES, ADJ, CARBON 470
RV211	1-230-717-11	s	RES, ADJ, CARBON 470
RV260	1-230-717-11	s	RES, ADJ, CARBON 470
RV310	1-238-015-11	s	RES, ADJ, CARBON 4.7K
RV311	1-238-015-11	s	RES, ADJ, CARBON 4.7K
RV401	1-238-012-11	s	RES, ADJ, CARBON 1K
RV402	1-238-012-11	s	RES, ADJ, CARBON 1K
RV480	1-238-012-11	s	RES, ADJ, CARBON 1K
RV481	1-238-013-11	s	RES, ADJ, CARBON 2.2K
RV482	1-238-013-11	s	RES, ADJ, CARBON 2.2K

FRAME

Ref. No. or Q'ty	Part No.	SP	Description
2pcs	⚠1-532-203-00	s	FUSE, TIME-LAG 2A 250V "AC-136 BOARD"
2pcs	⚠1-532-237-00	s	FUSE, TIME-LAG 3.15A 250V "DC-53A BOARD"
1pc	1-690-612-11	o	WIRE, FLEXIBLE CARD 20P "SS-49A BOARD TO VM-12P BOARD"
1pc	1-690-613-11	o	WIRE, FLEXIBLE CARD 26P "VO-37A BOARD TO CR-39 BOARD"
1pc	1-690-614-12	o	WIRE, FLEXIBLE CARD 28P "SS-49A BOARD TO DR-176 BOARD"
CN1001	⚠1-580-375-11	s	INLET, AC 3P, MALE "AC IN"
CS1001	1-806-682-91	s	SENSOR, DEW CONDENSATION (with harness)
FB1001	1-543-793-11	s	FILTER, CLAMP (FERRITE CORE) "HARNESS(VM VO-1)"
FB1002	1-543-793-11	s	FILTER, CLAMP (FERRITE CORE) "HARNESS(AU MIC)"
H1001	X-3165-588-1	o	HEAD ASSY, ACE
H1002	8-848-578-12	s	DRUM ASSY DZH-41A-R
	8-848-579-02	s	UPPER DRUM ASSY DZR-41-R
H1003	1-543-695-11	s	HEAD, FULL-ERASE
M904	X-3727-784-1	s	MOTOR ASSY (includes CM-14 board) "CASSETTE COMPARTMENT"
M1002	8-835-480-02	s	MOTOR, DC SCV-0401A "CAPSTAN"
M1003	8-835-432-01	s	MOTOR, DC SRV-0201A "T-REEL"
M1004	8-835-432-01	s	MOTOR, DC SRV-0201A "R-REEL"
M1005	X-3165-593-2	o	MOTOR ASSY, CAM "LOADING"
PM1001	1-454-531-11	s	SOLENOID, PLUNGER (with harness) "BRAKE"
PM1002	1-454-434-21	s	SOLENOID, PLUNGER (with harness) "PINCH"
PM1003	1-454-334-71	s	SOLENOID, PLUNGER (with harness) "T-BRAKE"
S1001	1-571-099-11	s	SWITCH, MICRO "CASSETTE DOWN"
S1002	1-570-771-11	s	SWITCH, MICRO "MISS REC"
S1003	1-571-099-11	s	SWITCH, MICRO "VHS CASSETTE"
S1004	⚠1-570-052-11	s	SWITCH, PUSH (AC POWER) "POWER"
S1005	⚠1-570-173-11	s	SWITCH, SLIDE (VOLTAGE SELECT) "VOLTAGE SELECTOR"
T901	⚠1-450-912-11	s	TRANSFORMER, POWER (with harness)

NOTES: *a; S/N 10001 thru 10030   *c; S/N 10001 thru 10280   *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130   *d; S/N 10001 thru 10480

HARNESS'S CHILD PARTS

HARNESS(A-ERASE):CN302/SS-49A board to CN617/AH-28 board

Ref. No. or Q'ty	Part No.	SP	Description
CN302F	1-569-196-11	o	HOUSING, 3P
1pc	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN617F	1-569-195-41	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(AC INLET): to CN1/AC-136 board

Ref. No. or Q'ty	Part No.	SP	Description
1pc	⚠1-535-316-11	o	TERMINAL, GROUND (M4)
CN1F	⚠1-562-211-11	o	HOUSING, VH 3P
2pcs	⚠1-562-210-11	o	CONTACT, FEMALE, AWG18-22
CN1001	⚠1-580-375-11	s	INLET, AC 3P, MALE
1pc	4-605-946-01	o	COVER, AC INLET

HARNESS(AU CONT):CN142/SS-49A board to CN311/AU-161A board

Unstock Part

HARNESS(AU HEAD):CN315,316/SS-49A board to CN616/AH-28 board

Ref. No. or Q'ty	Part No.	SP	Description
CN315F	1-569-196-21	o	HOUSING, 3P
1pcs	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN316F	1-569-196-41	o	HOUSING, 3P
1pcs	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN616F	1-569-197-11	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(AU IN):CN309/AU-161A board to CN501/CP-183 board

Ref. No. or Q'ty	Part No.	SP	Description
CN309F	1-569-197-41	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN501F	1-569-197-41	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(AU MIC):CN2/CN-633 board to CN314/AU-161A board

Ref. No. or Q'ty	Part No.	SP	Description
CN314F	1-569-197-11	o	HOUSING, 4P
1pc	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN2F	1-569-197-11	o	HOUSING, 4P
1pc	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
FB1002	1-543-793-11	s	FILTER, CLAMP (FERRITE CORE)

HARNESS(AU MON):CN154/KY-219 board to CN307/AU-161A board

Unstock Part

(HARNESS'S CHILD PARTS)

HARNESS(AU OUT):CN310/AU-161A board to CN502/CP-183 board

Ref. No. or Q'ty	Part No.	SP	Description
CN310F	1-569-202-21	o	HOUSING, 9P
9pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN502F	1-569-202-21	o	HOUSING, 9P
9pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(AU REG):CN140/SS-49A board to CN313/AU-161A board

Unstock Part

HARNESS(CAPSTAN):CN632/DR-176 board to CN603/CAPSTAN motor

Ref. No. or Q'ty	Part No.	SP	Description
CN632F	1-569-202-11	o	HOUSING, 9P
8pcs	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
1pc	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN603F	1-569-202-11	o	HOUSING, 9P
8pcs	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
1pc	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(CASSECON):CN105/SS-49A board to CN001/CM-14 board

Unstock Part

HARNESS(CASSETTE DOWN): to CN652/HN-160 board

Ref. No. or Q'ty	Part No.	SP	Description
CN652F	1-569-195-21	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
S1001	1-571-099-11	s	SWITCH, MICRO

HARNESS(CN-KY):CN152/KY-219 board to CN1/CN-633 board

Unstock Part

HARNESS(CR-SS):CN133/SS-49A board to CN213/CR-39 board

Unstock Part

HARNESS(CTL):CN107/SS-49A board to CN618/AH-28 board

Ref. No. or Q'ty	Part No.	SP	Description
CN107F	1-569-196-11	o	HOUSING, 3P
1pc	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN618F	1-569-195-11	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(DRUM):CN634/DR-167 board to CN604/DRUM motor

Ref. No. or Q'ty	Part No.	SP	Description
CN634	1-562-748-11	o	HOUSING, BOARD-IN 15P
15pcs	1-564-832-11	o	CONTACT, MALE
CN604F	1-580-938-11	o	HOUSING, 15P
15pcs	1-565-740-11	o	CONTACT, FEMALE

NOTES: *a; S/N 10001 thru 10030
*b; S/N 10001 thru 10130
*c; S/N 10001 thru 10280
*d; S/N 10001 thru 10480
*e; S/N 10131 thru 10280

(HARNESS'S CHILD PARTS)

Ref. No. or Q'ty	Part No.	SP	Description
HARNESS(F ERASE):CN303/SS-49A board to CN619/FULL ERASE HEAD			
CN303F	1-569-196-31	o	HOUSING, 3P
1pc	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN619F	1-569-195-11	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
HARNESS(KY):CN111/SS-49A board to CN151/KY-219 board			
CN111F	1-569-202-31	o	HOUSING, 9P
9pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN151F	1-569-202-31	o	HOUSING, 9P
9pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
HARNESS(LD MOTOR):CN106/SS-49A board to CN620/LD-35 board			
CN106	1-562-735-11	o	HOUSING, BOARD-IN 2P
2pcs	1-564-831-11	o	CONTACT, MALE
CN620F	1-569-195-11	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
HARNESS(LED):CN654/HN-160 board to LE-80 board			
CN654F	1-569-195-41	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
HARNESS(LS SENSOR):CN635/DR-167 board to CN610/SE-151 board			
CN635	1-562-735-11	o	HOUSING, BOARD-IN 2P
2pcs	1-564-832-11	o	CONTACT, MALE
CN610F	1-569-195-11	o	HOUSING, 2P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
HARNESS(MISS REC): to CN659/HN-160 board			
CN659F	1-569-195-21	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
S1002	1-570-771-11	s	SWITCH, MICRO
HARNESS(OPTION1):CN114/SS-49A board to CN551/OPTION board			
CN114F	1-569-204-11	o	HOUSING, 11P
11pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN551F	1-569-204-11	o	HOUSING, 11P
11pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
HARNESS(OPTION2):CN110/SS-49A board to CN552/OPTION board			
CN110F	1-569-205-31	o	HOUSING, 12P
12pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN552F	1-569-205-11	o	HOUSING, 12P
12pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

(HARNESS'S CHILD PARTS)

Ref. No. or Q'ty	Part No.	SP	Description
HARNESS(POWER SW):CN2/AC-136 board to CN3/AC-136 board			
CN2F	⚠1-562-285-11	o	HOUSING, VH 4P
2pcs	⚠1-562-210-11	o	CONTACT, FEMALE, AWG18-22
CN3F	⚠1-562-211-11	o	HOUSING, VH 3P
2pcs	⚠1-562-210-11	o	CONTACT, FEMALE, AWG18-22
S1004	⚠1-570-052-11	s	SWITCH, PUSH (AC POWER)
1pc	3-177-256-01	o	COVER, SWITCH
HARNESS(REMAIN):CN116/SS-49A board to CN503/CP-183 board			
CN116F	1-569-206-41	o	HOUSING, 13P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN503F	1-569-201-11	o	HOUSING, 8P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
HARNESS(RP AFM):CN308/AU-161A board to CN805/RP-62A board			
CN308F	1-569-199-31	o	HOUSING, 6P
1pc	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN805F	1-569-199-31	o	HOUSING, 6P
1pc	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
HARNESS(RP CONT):CN132/RP-62A board to CN803/SS-49A board			
CN132F	1-569-199-41	o	HOUSING, 6P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN803F	1-569-199-41	o	HOUSING, 6P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
HARNESS(RP FSC):CN206/VO-37A board to CN806/RP-62A board			
CN206	1-562-738-11	o	HOUSING, BOARD-IN 5P
5pcs	1-564-831-11	o	CONTACT, MALE
CN806F	1-569-198-11	o	HOUSING, 5P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
HARNESS(RP PB):CN202/VO-37A board to CN802/RP-62A board			
CN202	1-569-740-11	o	HOUSING, BOARD-IN 7P
7pcs	1-564-831-11	o	CONTACT, MALE
CN802F	1-569-200-11	o	HOUSING, 7P
7pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
HARNESS(RP REC):CN207/VO-37A board to CN807/RP-62A board			
CN207	1-569-739-11	o	HOUSING, BOARD-IN 6P
6pcs	1-564-831-11	o	CONTACT, MALE
CN807F	1-569-199-11	o	HOUSING, 6P
6pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

NOTES: *a; S/N 10001 thru 10030
*b; S/N 10001 thru 10130
*c; S/N 10001 thru 10280
*d; S/N 10001 thru 10480
*e; S/N 10131 thru 10280

(HARNESS'S CHILD PARTS)

Ref. No. or Q'ty	Part No.	SP	Description
HARNESS(RP-VO):CN208/VO-37A board to CN808/RP-62A board			
CN208	1-562-736-11	o	HOUSING, BOARD-IN 3P
3pcs	1-564-831-11	o	CONTACT, MALE
CN808F	1-569-196-11	o	HOUSING, 3P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
HARNESS(S-DR1):CN1/DR-153(b) board to CN1/S-REEL motor			
Unstock Part			
HARNESS(S-DR2):CN2/DR-153(b) board to CN2/S-REEL motor			
Unstock Part			
HARNESS(S-REEL):CN123/SS-49A board to CN3/DR-153(b) board			
Unstock Part			
HARNESS(S-TEN):CN657/HN-160 board to LE-86 & SE-151 boards			
CN316F	1-569-196-41	o	HOUSING, 3P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
HARNESS(SS REG):CN100/SS-49A board to CN902/DC-53A board			
CN100F	1-561-992-11	o	HOUSING, 11P
11pcs	1-560-901-21	o	CONTACT, FEMALE
CN902F	1-561-992-11	o	HOUSING, 11P
11pcs	1-560-901-21	o	CONTACT, FEMALE
HARNESS(SW-1):CN102/SS-49A board to CN658/HN-160 board			
Unstock Part			
HARNESS(SW-2):CN103/SS-49A board to CN655/HN-160 board			
Unstock Part			
HARNESS(T-BRAKE C):DR-167 board to CN1/DUS-544 board			
CN1F	1-569-195-11	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
HARNESS(T-DR1):CN1/DR-153(a) board to CN1/T-REEL motor			
Unstock Part			
HARNESS(T-DR2):CN2/DR-153(a) board to CN2/T-REEL motor			
Unstock Part			
HARNESS(T-REEL):CN152/KY-219 board to CN1/CN-633 board			
Unstock Part			

(HARNESS'S CHILD PARTS)

Ref. No. or Q'ty	Part No.	SP	Description
HARNESS(T-TOP):CN651/HN-160 board to SE-152 board			
CN651F	1-569-195-11	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
HARNESS(TR):CN117/SS-49A board to CN157/KY-219 board			
CN117F	1-569-197-21	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN157F	1-569-197-21	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
HARNESS(VHS CASSETTE): to CN653/HN-160 board			
CN653F	1-569-195-31	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
S1003	1-571-099-11	s	SWITCH, MICRO
HARNESS(VM VO-1):CN221/VO-37A board to CN701/VM-12P board			
CN221F	1-569-202-11	o	HOUSING, 9P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN701F	1-569-202-41	o	HOUSING, 9P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
FB1001	1-543-793-11	s	FILTER, CLAMP (FERRITE CORE)
HARNESS(VM VO-2):CN222/VO-37A board to CN702/VM-12P board			
CN222F	1-569-198-41	o	HOUSING, 5P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN702F	1-569-198-41	o	HOUSING, 5P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
HARNESS(VO CP1):CN231/VO-37A board to CN504/CP-183 board			
CN231F	1-569-198-41	o	HOUSING, 5P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN504F	1-569-198-41	o	HOUSING, 5P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
HARNESS(VO CP2):CN232/VO-37A board to CN505/CP-183 board			
CN232F	1-569-201-21	o	HOUSING, 8P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN505F	1-569-201-21	o	HOUSING, 8P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
HARNESS(VO CONT):CN203/VO-37A board to CN131/SS-49A board			
Unstock Part			
HARNESS(VO REG):CN201/VO-37A board to CN130/SS-49A board			
Unstock Part			

NOTES: *a; S/N 10001 thru 10030
*b; S/N 10001 thru 10130
*c; S/N 10001 thru 10280
*d; S/N 10001 thru 10480
*e; S/N 10131 thru 10280

(HARNESS'S CHILD PARTS)

Ref. No. or Q'ty	Part No.	SP	Description
HARNESS(VOLTAGE SELECTER): to CN5/AC-136 board			
CN5F	⚠1-562-286-11	o	HOUSING, VH 5P
3pcs	⚠1-562-210-11	o	CONTACT, FEMALE, AWG18-22
S1005	⚠1-570-173-11	s	SWITCH, SLIDE (VOLTAGE SELECT)
1pc	3-175-981-01	o	COVER, SWITCH
BRAKE SOLENOID: to CN656/HN-160 board			
CN656F	1-569-196-11	o	HOUSING, 3P
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
DEW CONDENSATION SENSOR: to CN108/SS-49A board			
CN108F	1-562-147-11	o	HOUSING, 2P
2pcs	1-564-026-00	o	CONTACT, FEMALE, AWG26-30
PINCH SOLENOID: to CN118/SS-49A board			
CN118F	1-569-196-31	o	HOUSING, 3P
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
POWER TRANSFORMER:CN4/AC-136 board to CN101/DC-53A board			
CN4F	⚠1-562-286-11	o	HOUSING, VH 5P
3pcs	⚠1-562-210-11	o	CONTACT, FEMALE, AWG18-22
CN101F	⚠1-562-285-11	o	HOUSING, VH 4P
4pcs	⚠1-562-210-11	o	CONTACT, FEMALE, AWG18-22
T-BRAKE SOLENOID: to CN633/DR-167 board			
CN633F	1-569-196-11	o	HOUSING, 3P
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

14-4. PACKING MATERIALS AND ACCESSORIES

Ref. No. or Q'ty	Part No.	SP	Description
1pc	3-177-197-01	o	CUSHION (UPPER)
1pc	3-177-198-01	o	CUSHION (LOWER)
1pc	3-177-399-01	o	INDIVIDUAL CARTON
1pc	3-704-295-01	o	BAG, PROTECTION (STANDARD)
1pc	⚠3-754-503-13	s	MANUAL, INSTRUCTION

14-5. OPTIONAL FIXTURES LIST

Part No.	SP	Description
H-7099-035-H	o	TORQUE GAUGE ADAPTOR
H-7099-039-H	o	TORQUE GAUGE
H-7099-052-H	o	ALIGNMENT TAPE, JVC-MH-2(PAL)
J-6080-811-A	o	GUIDE HEIGHT ADJ. DRIVER
or		
J-6082-044-A	o	GUIDE HEIGHT ADJ. DRIVER
J-6080-840-A	o	SMALL MIRROR
J-6090-014-A	o	MOLYCOTE GREASE EM-30LG
or		
4-918-645-01	o	MOLYCOTE GREASE EM-30L
J-6380-040-A	o	RG REFERENCE PIN (1)
J-6380-050-A	o	RG REFERENCE PIN (2)
J-6380-080-A	o	REFERENCE PLATE
J-6380-090-A	o	REEL TABLE HEIGHT ADJ. TOOL
J-6380-550-A	o	MASTER BLOCK
J-6380-700-A	o	MASTER BLOCK
J-6380-710-A	o	X VALUE ADJUSTMENT TOOL
J-6381-370-A	o	RP EXTENSION TOOL
J-6381-380-A	o	S-BNC VIDEO CABLE
J-6381-910-A	o	Y/C DELAY ADJUSTMENT TOOL
2-034-697-00	o	CLEANING CLOTH
7-700-736-05	o	L-SHAPED HEXAGONAL WRENCH(1.5mm)
7-700-736-06	o	L-SHAPED HEXAGONAL WRENCH(0.89mm)
7-700-751-02	o	BOX DRIVER(5.5mm)
8-192-602-48	o	ALIGNMENT TAPE, KRV-4821PSA
8-192-603-96	o	ALIGNMENT TAPE, KRV-39PF
- Pending -	o	ALIGNMENT TAPE, KRV-45HPS(S-VHS)
- Pending -	o	ALIGNMENT TAPE, KRV-45PS(VHS)
8-896-024-94	o	BLANK TAPE, GR-120KG(VHS)
9-911-053-00	o	THICKNESS GAUGE
9-919-573-01	o	CLEANING FLUID
COMMERCIALLY SOLD		TENTELOMETER, T2-H7-UMC
		HEAD DEGAUSSER
		S-VHS BLANK TAPE

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

SONY

VIDEO CASSETTE RECORDER

SVO-9500MDP

SERVICE MANUAL

SUPPLEMENT-1

Please add and replace your manual with this SUPPLEMENT-1

SUBJECT

- TABLE OF CONTENTS
- SECTION 2 SERVICE INFORMATION
  - 2-17. Microcomputer Data Display Mode
  - 2-18. Error Codes
- SECTION 12 SEMICONDUCTOR PIN ASSIGNMENTS
- SECTION 13 BOARD LAYOUTS AND SCHEMATIC DIAGRAMS
- SECTION 14 SPARE PARTS AND FIXTURES
  - 14-6. Additional Electrical Parts List

SVO-9500MDP (EK)
9-977-484-81

Sony Corporation
Image & Sound Communication Company

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Engineering Services Dept.

Other functions

Search	Possible (still, 5 times normal speed in both forward and reverse directions) With SVRM-100: still or picture search with $^{1}/_{10}$ to 10 times normal speed in both forward and reverse directions

Tape transport

Tape speed	23.39 mm/sec.
Recording and playback time	Approx. 180 minutes (with E-180)
Fast forward and rewind time	Within 2.5 minutes (with E-180)
Usable tape	Standard VHS tapes

General

Power requirements	220/240 V AC ±10%, selectable 50/60 Hz ±10%, 220 V: 0.33 A 240 V: 0.3 A
Power consumption	72 VA
Operating position	Horizontal
Storage temperature	–20°C to +60°C (–4°F to +140°F)
Operating temperature	5°C to 40°C (41°F to 104°F)
Dimensions	270 × 132 × 366 mm (w/h/d) (10 $^{3}/_{4}$ × 5 $^{1}/_{4}$ × 14 $^{1}/_{2}$ inches) not including projecting parts and controls
Weight	Approx. 10 kg (22 lb 1 oz)
Supplied accessory	Operating instructions (1)

Design and specifications are subject to change without notice.

Optional accessories

SVRM-100 Remote control unit (for the front REMOTE connector)
SVAC-100 indicator unit
SVBK-100 33-pin interface board
SVBK-110 34-pin interface board
SVBK-120 RS-232C interface board
RM-81/RM-91 Remote control unit (for the front REMOTE 2 connector)

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2-15. MICROPROCESSOR DATA DISPLAY MODE

The data display mode for service is provided which allows the internal data and the input/output ports status of the microprocessor mounted in the VTR to be displayed on the timer counter unit. In this mode, the operation of the microprocessor and its peripheral circuit can be checked by operating the VTR.

Also, the loading count and hours meter (drum head service time) information provided for maintenance and periodic check can be displayed.

This mode is applicable to the following two boards, each of which is mounted on the SS-49A board.

- IC101 (CXP80624)
- IC306 (μPD75108CW)

The data display mode offers the 39 different menu items No. 00 to No. 38 lost below.
These data are divided into two types of data : one which displays the internal status of the microprocessor (No. 00, No. 01, No. 13 to No. 22, No. 30 to No. 38) and one which displays the contents of the input/output ports (No. 02 to No. 12, No. 23 to No. 29).

Menu No.	Data Contents (in hexadecimal notation for items other than No. 00 and No. 01)	Microprocessor I/O port	
00	Loading Count (in 0 to 999999 decimal notation)		
01	Total Hours Meter (in 0H to 99999H decimal notation)		
02	Peripheral Block control (1)	IC101	PA0 to PA7
03	Peripheral Block control (2)		PB0 to PB7
04	Peripheral Block control (3)		PC0 to PC3
05	Peripheral Block control (4)		PD0 to PD7
06	Peripheral Block control (5)		PE0 to PE7
07	Peripheral Block control (6)		PF0 to PF7
08	Peripheral Block control (7)		PG0 to PG7
09	Peripheral Block control (8)		PH0 to PH7
10	Peripheral Block control (9)		PI0 to PI4
11	Peripheral Block control (10)		PJ0 to PJ7
12	Peripheral Block control (11)		PK0
13	Mechanism Operation Commands (Output State)		
14	Mechanism Status (Operating State)		
15	Cam Position Status (Loading Position)		
16	Cassette Compartment Position Status		
17	Servo Block Operation Commands (Output State)		
18	Servo Block Status (Operating State)		
19	Drum Servo Mode (Operating State)		
20	Capstan Servo Mode (Operating State)		
21	A/D Data of Tracking Control VR (Front Panel)	IC101	AN0 (Analog Input)
22	A/D Data of Switching Position Adjustment VR (RV102/SS-49A Board)		AN1 (Analog Input)
23	Reel Status (REEL/FG Input)	IC306	P20 to P23, P30 to P33
24	T Reel Torque Position		P40 to P43, P50 to P53
25	S Reel Torque Position in Program Tension Mode		P60 to P63, P70 to P73
26	Reel Control (1), Peripheral Block Control (4) (Brake, Tension)		P80 to P83, P90 to P93
27	Sensor LED Burnout Detection (For Tension Regulator, For Tape Top/End Sensor)		PTH03 to PTH00
28	Reel Control (2), Peripheral Block Control (5) (Non-Interlace Mode, Tension)		P120 to P123, P130 to P133
29	Peripheral Block Control (6) (CTL REC, CNR)		P140 to P143
30	Key Input Status (1)		
31	Key Input Status (2)		
32	Remote Control Key Input Status (1)		
33	Remote Control Key Input Status (2)		
34	Optional Key Input Status (1)		
35	Optional Key Input Status (2)		
36	LED Display Data (1)		
37	LED Display Data (2)		
38	*Aging Mode Activation. Tape Top (PLAY) ⇔ Tape End (REW)		

* For information on Menu No. 38, refer to sub-section 2-15-4.

2-15-1. Activating/Terminating Method and Basic Operations

Preparation

Remove the U case so that the setting of the DIP switch (S101) on the SS-49 board may be changed.

(For information on how to remove the U case, refer to page 2-1.)

Activation

1) Turn ON the section No. 7 of the DIP switch (S101) on the SS-49A board.
2) The Menu No. 00 is displayed on the timer counter unit.

Termination

Turn OFF the section No. 7 of the DIP switch (S101) on the SS-49A board.

Basic Operations

a) Menu Number Selection : ITEM Button

Once the ITEM button on the front panel is pressed, the Menu Number is incremented one. When this button is pressed at No. 38, the Menu Number is returned to No. 00.

b) Data Display at Menu No. 00/No. 01 : DATA Button

While the DATA button on the front panel is pressed, the data contents are displayed.

[At any other Menu Number, its data contents are already displayed on the right of the Menu Number Refer to Display Example c).]

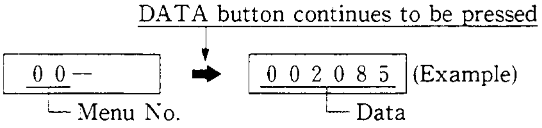
c) Menu Number Reset : RESET Button

When the RESET button on the front panel is pressed, the Menu Number is reset to 00.

2-15-2. Display Data and Explanation Display Examples

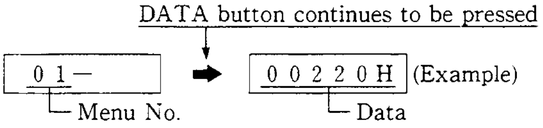
a) Menu No. 00 :

The data contents (loading count) are displayed in six decimal numbers.


DATA button continues to be pressed
0 0 –
0 0 2 0 8 5
(Example)
Menu No.
Data

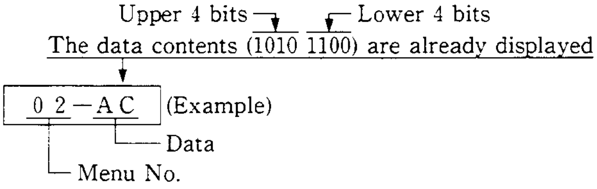
b) Menu No. 01 :

The data contents (hours meter) are displayed in five decimal numbers.


DATA button continues to be pressed
0 1 –
0 0 2 2 0 H
(Example)
Menu No.
Data

c) Menu No. 02 to No. 38 :

The data contents (8-bit data) are displayed in two hexadecimal numbers.


Upper 4 bits
Lower 4 bits
The data contents (1010 1100) are already displayed
0 2 – A C
(Example)
Data
Menu No.

Display to Bit Data

	Upper 4 bits				Lower 4 bits			
Bit Number	7	6	5	4	3	2	1	0
Bit State (Example)	1	0	1	0	1	1	0	0
Display (Example)	A				C			

Correspondence Table of Upper/Lower 4 Bits to Display

4 bits				Display
0	0	0	0	0
0	0	0	1	1
0	0	1	0	2
0	0	1	1	3
0	1	0	0	4
0	1	0	1	5
0	1	1	0	6
0	1	1	1	7

4 bits				Display
1	0	0	0	8
1	0	0	1	9
1	0	1	0	A
1	0	1	1	B
1	1	0	0	C
1	1	0	1	D
1	1	1	0	E
1	1	1	1	F

2-15-3. Datails of Data Contents

The following describes the data contents of Menu No. 02 to No. 37.
Tables 1 to 4 show the contents of the input/output ports on the IC101/SS-49A board.
Tables 5, 8, and 9 show the internal state of the IC101/SS-49A board.
Tables 6 and 7 show the contents of the input/output ports on the IC306/SS-49A board.
The number encircled presents the pin number.

Table 1 Menu No. 02 and No. 03

Menu No.	Bit No.	Data Contents (In hexadecimal notation unless otherwise noted)	Microprocessor (IC101) I/O port	Connection Companion
02	7	1 ; AFM REC (Audio FM REC Control)	OUT/PA7 (91)	AU board (Q8) and RP board (IC301 ㉕) (via inverter Q118 on SS board)
		Always "0"	———	
	6	1 ; NORMAL, 0 ; AUTO (Shuttle Head AMS Control)	OUT/PA6 (92)	RP board (IC201 ㉘) (via inverter Q117 on SS board)
	5	1 ; AU REC (CH-1) (Longitude Audio REC Control)	OUT/PA5 (93)	AU board (IC201 ②, IC301 ②, and Q312)
	4	Always "0"	———	
	3	1 ; AU REC (CH-2) (Longitude Audio REC Control)	OUT/PA3 (95)	Not in use.
	2	Always "0"	———	
		1 ; FE ON (Flying Erase Head Control)	OUT/PA2 (96)	RP board (Q301)
	1, 0	Always "0"	———	
03	7	0 ; FWD, 1 ; REV (Capstan F/R Control)	OUT/PB7 (99)	DR-176 board (Q1) (via switch IC510 on SS board)
	6	Always "0"	———	
	5	1 ; AUTO, 0 ; NORMAL (Shuttle Head Control)	OUT/PB5 ①	RP board (IC201 ⑯)
	4	1 ; LAU SEARCH MODE (Longitude Audio Signal Level Down)	OUT/PB4 ②	AU board (Q203 and Q303), and VM-12 board (D512)
	3	1 ; LOAD M ON (Loading Motor ON/OFF Control)	OUT/PB3 ③	SS board (IC109 ④)
	2	1 ; CASSECON M ON (Cassette Compartment Motor ON/OFF Control)	OUT/PB2 ④	SS board (IC109 ⑤)
	1	1 ; CW, 0 ; CCW (LOAD/CASSECON Motor Rotational Direction Control)	OUT/PB1 ⑤	SS board (IC109 ⑥)
	0	1 ; STOP SERVO ON (Capstan Stop Servo Control)	OUT/PB0 ⑥	SS board (Q516)

Table 2 Menu No. 04 to No. 06

Menu No.	Bit No.	Data Contents (In hexadecimal notation unless otherwise noted)	Microprocessor (IC101) I/O port	Connection Companion
04	7 to 5	Always "0"	———	
	4	Always "1"	———	
	3	Always "1" (NTSC System Select)	IN/PC3 ⑪	SS board (R151 (pull-up))
	2	0 ; VHS CASSETTE, 1 ; S-VHS CASSETTE (S-VHS/N-VHS Cassette Detect)	IN/PC2 ⑫	Mechanism (VHS CASSETTE switch)
	1	0 ; CASSETTE DOWN (Cassette Compartment Down Position Detect)	IN/PC1 ⑬	Mechanism (CASSETTE DOWN switch)
	0	1 ; C-IN, 0 ; MISS REC (Cassette In or Miss REC Detect)	IN/PC0 ⑭	Mechanism (MISS REC switch)
05	7	Normally "1" (OFF) (0 ; Error Detection Signal Muting)	IN/PD7 ㉓	SS board (S101 No. 1 switch)
	6	Normally "0" (ON) (0 ; Noise-less Mode)	IN/PD6 ㉔	SS board (S101 No. 2 switch)
	5	Normally "1" (OFF) (Not in use.)	IN/PD5 ㉕	SS board (S101 No. 3 switch)
	4	Normally "1" (OFF) (Reserved)	IN/PD4 ㉖	SS board (S101 No. 4 switch)
	3	Normally "1" (OFF) (0 ; MENU Initialize)	IN/PD3 ㉗	SS board (S101 No. 5 switch)
	2	Normally "1" (OFF) (Not in use)	IN/PD2 ㉘	SS board (S101 No. 6 switch)
	1	Normally "1" (OFF)[*1] (Microcomputer Data Display Mode)	IN/PD1 ㉙	SS board (S101 No. 7 switch)
	0	Normally "1" (OFF) (0 ; TOP/END Sensor Muting)	IN/PD0 ㉚	SS board (S101 No. 8 switch)
06	7	1 ; NORMAL, 0 ; CHIP SELECT (NON-VOL RAM Control)	OUT/PE7 (71)	SS board (IC102 ① and ⑥)
	6	Always "1"	———	
	5	0 ; AFM MUTE (Audio FM Signal Mute Control)	OUT/PE5 (73)	AU board (IC2 ⑬) (via inverter Q5 on AU board)
	4	1 ; CAPSTAN PULSE DRIVE MODE (Capstan Motor Control)	OUT/PE4 (74)	SS board (Q108)
	3, 2	Always "0"	———	
	1	Usually "1", sometimes "0" at CTL counting (Count CTL Level)	IN/PE1 (77)	SS board (IC512 ④) (via converter IC504 (1/6) on SS board)
	0	Always "1"	———	

[*1] Always "0" in the microcomputer data display mode.

Table 3 Menu No. 07 to No. 09

Menu No.	Bit No.	Data Contents (In hexadecimal notation unless otherwise noted)	Microprocessor (IC101) I/O port	Connection Companion
07	7	Decoder Control (In most case, ' 3 ' or ' b ' are displayed) Bit 7 6 5 4 — Function 0 0 0 0 — KY Board Select 0 0 0 1 — Reel Servo Micon Reset 0 0 1 0 — Indicater Unit I/F Enable 0 0 1 1 — CNR (VM Board) Select 0 1 0 0 — VISS Select 0 1 0 1 — Option Unit Select 0 1 1 X — Not in use 1 X X X — Disable Decoder	IN/PF7 ㊽	SS board (IC114 ④ and ⑤)
	6		IN/PF6 ㊾	SS board (IC114 ③)
	5		IN/PF5 ㊿	SS board (IC114 ②)
	4		IN/PF4 (51)	SS board (IC114 ①)
	3	Always "1"	———	
	2	CAM MODE 3 (Mechanical Cam Mode Position Detect)	IN/PF2 (56)	DR-167 board (IC2 ③) (via inverter Q119 on SS board)
	1	CAM MODE 2 (Mechanical Cam Mode Position Detect)	IN/PF1 (57)	DR-167 board (IC3 ③) (via inverter Q116 on SS board)
	0	CAM MODE 1 (Mechanical Cam Mode Position Detect)	IN/PF0 (58)	DR-167 board (IC4 ③) (via inverter Q107 on SS board)
08	7	1 ; 1ST FIELD WRITE (1st Field Freeze Control)	IN/PG7 (63)	VM board (IC200 ㉜ or IC253 ⑧) (via selector IC257 on VM board)
	6	Normally "1", 0 ; L-ADJ (NON-VOL RAM Initialize Control)	IN/PG6 (64)	SS board (TP107)
	5	Always "1" (Factory use)	IN/PG5 (65)	SS board (TP106, R153 (pull-up))
	4	SYNC (SYNC Pulse) (SYNC Pulse In)	IN/PG4 (66)	SS board (IC111 ⑮)
	3	PBCTL (PB CTL Pulse) (Servo Input Control)	IN/PG3 (67)	DUS-534 or SS board (IC500 ⑱)
	2	DPG (Drum PG Pulse) (Servo Input Control)	IN/PG2 (68)	SS board (IC707 ⑦) (via TP104 on SS board)
	1	DFG (Drum FG Pulse) (Servo Input Control)	IN/PG1 (69)	DR-167 board (IC1 ⑰) (via amp. Q114 and TP113 on SS board)
	0	CFG (Capstan FG Pulse) (Servo Input Control)	IN/PG0 (70)	SS board (TP103, IC513 ①) (via D509 on SS board)
09	7, 6	Always "0"	———	
	5	0 ; REC STANDBY (REC 9V Control of VO and RP Boards)	OUT/PH5 ㉝	VO board (Q14)
	4	1 ; VIDEO MUTE (Video Signal Mute Control)	OUT/PH4 ㉞	VO board (IC402 ④ and IC407 ④)
	3	0 ; VIDEO PB, 1 ; VIDEO E-E (Video and AFM PB/EE Control)	OUT/PH3 ㉟	AU board (IC1 ⑱, IC2 ⑯, and Q10) and VO board (IC101 ㊳, IC202 ⑭, Q13, Q201, IC403 ④, IC405 ④, Q41, and Q314)
	2	0 ; LAU PB, 1 ; LAU E-E (Longitude Audio (CH-1) PB/EE Control)	OUT/PH2 ㊱	AU board (IC201 ⑭, IC301 ⑭, Q201, and Q211)
	1	0 ; LAU PB, 1 ; LAU E-E (Longitude Audio (CH-2) PB/EE Control)	OUT/PH1 ㊲	Not in use
	0	1 ; AUDIO MUTE (Audio Mute Control)	OUT/PH0 ㊳	AU board (IC201 ⑫, IC301 ⑫, and Q314)

Table 4 Menu No. 10 to No. 12

<table>
<tr><th>Menu No.</th><th>Bit No.</th><th>Data Contents
(In hexadecimal notation unless otherwise noted)</th><th>Microprocessor (IC101) I/O port</th><th>Connection Companion</th></tr>
<tr><td rowspan="6">10</td><td>7 to 5</td><td>Always "0"</td><td>———</td><td></td></tr>
<tr><td>4</td><td>0 ; CAPSTAN FWD
(Capstan FWD Rotation Detect)</td><td>IN/PI4 (82)</td><td>SS board (IC508 ②)</td></tr>
<tr><td>3</td><td>Normally "1", 0 ; NOV-RAM BUSY
(NON-VOL RAM Busy)</td><td>IN/PI3 (83)</td><td>SS board (IC102 ⑦)</td></tr>
<tr><td>2</td><td>0 ; S-VHS, 1 ; N-VHS
(Video Mode Control)</td><td>OUT/PI2 (84)</td><td>VO board (Q10)</td></tr>
<tr><td>1</td><td>Normally "0", 1 ; FULL ERASE ON
(Full Erase Head Bias OSC Control)</td><td>OUT/PI1 (85)</td><td>Not in use</td></tr>
<tr><td>0</td><td>Normally "1", 0 ; HOURS METER RESET
(Hours Meter Reset Control)</td><td>IN/PI0 (86)</td><td>SS board (TP121)</td></tr>
<tr><td rowspan="8">11</td><td>7</td><td>1 ; S-VHS DETECT
(PB Video Mode Detect)</td><td>IN/PJ7 ⑮</td><td>RP board (IC302 ⑤)
(via Q313 and Q314 on RP board)</td></tr>
<tr><td>6</td><td>0 ; INCOME-VIDEO DETECT
(Video Input Detect)</td><td>IN/PJ6 ⑯</td><td>SS board (IC113 ⑥)
(via inverter Q121 on SS board)</td></tr>
<tr><td>5</td><td>0 ; REF VIDEO DETECT
(External Reference Video Input Detect)</td><td>IN/PJ7 ⑰</td><td>Not in use</td></tr>
<tr><td>4</td><td rowspan="2">CNR SYNC SELECT
(Input SYNC Select)
<table>
<tr><th colspan="2">Bit</th><th rowspan="2">SYNC</th></tr>
<tr><th>4</th><th>3</th></tr>
<tr><td>1</td><td>X</td><td>CNR SYNC</td></tr>
<tr><td>0</td><td>1</td><td>REF SYNC</td></tr>
<tr><td>0</td><td>0</td><td>INCOME</td></tr>
</table></td><td>OUT/PJ4 ⑱</td><td>SS board (IC111 ⑩)</td></tr>
<tr><td>3</td><td>OUT/PJ3 ⑲</td><td>SS board (IC111 ⑪)</td></tr>
<tr><td>2</td><td>Normally "0", 1 ; EMPTY OF VM BOARD
(VM Board Connection Detect)</td><td>IN/PJ2 ⑳</td><td>VM board (GND)</td></tr>
<tr><td>1</td><td rowspan="2">OPTION SELECT
(Optional Unit Connection Condition Detect)
<table>
<tr><th colspan="2">Bit</th><th rowspan="2">Optional Unit</th></tr>
<tr><th>1</th><th>0</th></tr>
<tr><td>1</td><td>1</td><td>Empty</td></tr>
<tr><td>1</td><td>0</td><td>33/34 Pins</td></tr>
<tr><td>0</td><td>1</td><td>RS-232C</td></tr>
<tr><td>0</td><td>0</td><td>RS-422</td></tr>
</table></td><td>IN/PJ1 ㉑</td><td rowspan="2">Optional unit (GND or OPEN)
33-pin interface board : SVBK-100
33-pin interface board : SVBK-110
RS-232C interface board : SVBK-120
RS-422 interface board : Unusable unit</td></tr>
<tr><td>0</td><td>IN/PJ0 ㉒</td></tr>
<tr><td rowspan="2">12</td><td>7 to 1</td><td>Always "0" (Not in use)</td><td>———</td><td></td></tr>
<tr><td>0</td><td>0 ; HUMID
(Dew Detect)</td><td>IN/PK0 (87)</td><td>DEW SENSOR (via driver (Q120, and 128 to 131) on SS board)</td></tr>
</table>

Table 5 Menu No. 13 to No. 22

Menu No.	Bit No.	Data Contents (In hexadecimal notation unless otherwise noted)
13	—	Mechanism operation command output state indication 01; EJECT, 02; STOP, 03; FF, 04; REW, 10; PLAY/REC, 20; PAUSE, 25; LPAUSE, 30; FWD SEARCH, 40; REW SEARCH
14	—	Mechanism operational status indication 01; EJECT, 02; STOP, 03; FF, 04; REW, 05; LOADING/UNLOADING, 06; FRUNTH, 10; PLAY/REC, 20; PAUSE, 25; LPAUSE, 30; FWD SEARCH, 40; REW SEARCH
15	—	Mechanism activity state indication (following by MENU no. 07 bits 2 to 0) 80; PINCH ON, 40; Transition PINCH ON and THREADING-END, 20; THREADING-END, 10; BRAKE MODE, 08; Transition BRAKE MODE and FR STOP, 04; FR STOP, 02; Transition FR STOP and UNTHREADING-END, 01; UNTHREADING-END
16	—	Cassette status indication
	7	1; CASSETTE DOWN NG
	6, 5	Always “0” (Not in use)
	4	1; CASSETTE EXIST
	3	0; TAPE END DETECT
	2	0; TAPE TOP DETECT
	1	0; CASSETTE DOWN SW ON
	0	1; CASSETTE IN, 0; MISS REC SW ON
17	—	Capstan/drum servo operation command output state indication
	7	SERVO DIRECTION (0; REW, 1; FWD)
	6	Always “0” (Not in use)
	5	1; PLAY MODE
	4	1; REC MODE
	3	1; PAUSE MODE
	2	1; SEARCH MODE
	1	1; ×5VV SEARCH MODE (Total tape volume estimation mode)
	0	1; SERVO ENABLE
18	—	Capstan/drum servo operational status indication
	7	1; CTL EXIST
	6	1; VIDEO IN DETECT
	5	1; CTL EXIST
	4	1; NOISELESS STILL
	3	1; CAPSTAN STOP
	2	1; DRUM STOP
	1	1; CAPSTAN LOCK
	0	1; DRUM LOCK
19	—	Drum servo mode state indication 00; OFF MODE, 01; REC/PLAY MODE, 02; AFC MODE, 03; STEP SLOW MODE
20	—	Capstan servo mode state indication 00; OFF MODE, 01; REC MODE, 02; PLAY MODE, 03; PINCH OFF MODE, 04; NOISELESS MODE, 05; SYNCHRO MODE, 06; STEP SLOW MODE, 07; SEARCH MODE
21	—	TRACKING control VR position state indication (Data value at VR’s mechanical center is 80 ±10) Analog In; AN0 (IC101 (62))
22	—	Switching position VR (RV102/SS board) position state indication Analog In; AN1 (IC101 (61))

Table 6 Menu No. 23 to No. 26

Menu No.	Bit No.	Data Contents (In hexadecimal notation unless otherwise noted)	Microprocessor (IC306) I/O port	Connection Companion
23	7 to 4	Always "0" (when inserted the cassette, ' 1 ' (0001) is displayed for a moment.)		
	3	0 ; T-REEL REV, 1 ; T-REEL FWD (Take-up Reel Rotational Direction Status)	IN/P23 ⑪	DUS-445 board (IC307 ②)
	2	0 ; T-REEL STOP, 1 ; T-REEL ROTATE (Take-up Reel Stop/Rotate Status)	IN/P22 ⑫	DUS-445 board (IC308 ⑥)
	1	0 ; S-REEL REV, 1 ; S-REEL FWD (Supply Reel Rotational Direction Status)	IN/P21 ⑬	DUS-445 board (IC307 ⑫)
	0	0 ; S-REEL STOP, 1 ; S-REEL ROTATE (Supply Reel Stop/Rotate Status)	IN/P20 ⑭	DUS-445 board (IC308 ⑩)
24	—	Take-up reel torque level data state indication		
	7	D-A Data Bit 3	OUT/P53 ㊶	SS board (IC302 ⑤) (via D-A resisters R442 to 457 on SS board)
	6	D-A Data Bit 2	OUT/P52 ㊷	
	5	D-A Data Bit 1	OUT/P51 ㊸	
	4	D-A Data Bit 0 (LSB)	OUT/P50 ㊹	
	3	D-A Data Bit 7 (MSB)	OUT/P43 ㊲	
	2	D-A Data Bit 6	OUT/P42 ㊳	
	1	D-A Data Bit 5	OUT/P41 ㊴	
	0	D-A Data Bit 4	OUT/P40 ㊵	
25	—	Supply reel program torque level data state indication		
	7	D-A Data Bit 3	OUT/P73 (52)	SS board (IC301 ③) (via D-A resisters R426 to 441 on SS board)
	6	D-A Data Bit 2	OUT/P72 (53)	
	5	D-A Data Bit 1	OUT/P71 (54)	
	4	D-A Data Bit 0 (LSB)	OUT/P70 (55)	
	3	D-A Data Bit 7 (MSB)	OUT/P63 ㊽	
	2	D-A Data Bit 6	OUT/P62 ㊾	
	1	D-A Data Bit 5	OUT/P61 ㊿	
	0	D-A Data Bit 4	OUT/P60 (51)	
26	7	0 ; CAPSTAN CORRECT ENABLE (Reel Transient Correction)	OUT/P93 (60)	SS board (Q350)
	6	0 ; PINCH ON (PINCH Solenoid Control)	OUT/P92 (61)	SS board (PINCH SOLENOID DRIVER ; Q349), and Option board
	5	Always "0" (Not in use)	OUT/P91 (62)	SS board (Q336) : Not in use.
	4	0 ; T-BRAKE OFF, 1 ; T-BREAK ON (Take-up Reel Break Solenoid Control)	OUT/P90 (63)	SS board (T BREAK SOLENOID DRIVER ; Q302)
	3	0 ; STILL TENSION (Still Tension VR Select)	OUT/P83 (56)	SS board (IC314 ⑩) (via switch Q333 on SS board)
	2	0 ; T-REEL FWD, 1 ; T-REEL REV (Take-up Reel Control Command)	OUT/P82 (57)	DR-153 (a) board (IC1 ⑨) (via inverter Q320 on SS board)
	1	0 ; S-REEL FWD, 1 ; S-REEL REV (Supply Reel Control Command)	OUT/P81 (58)	DR-153 (b) board (IC1 ⑨) (via inverter Q321 on SS board)
	0	0 ; BREAK OFF, 1 ; BREAK ON (Break Solenoid Control)	OUT/P80 (59)	SS board (BREAK SOLENOID DRIVER ; Q332)

Table 7 Menu No. 27 to No. 29

Menu No.	Bit No.	Data Contents (In hexadecimal notation unless otherwise noted)	Microprocessor (IC306) I/O port	Connection Companion
27	7 to 4	Always "0" (Not in use)	———	
	3	Normally "1", 0 ; TRQ ADJ (Torque Adjustment Mode)	IN/PTH03 ⑤	SS board (TP304, R399 (pull-up))
	2	Always "0" (Not in use)	IN/PTH02 ⑥	SS board (GND)
	1	Always "1" ; TEN-REG LED BROKEN (Tension Regulator LED Broken Detect)	IN/PTH01 ⑦	LE-86 board (D1)
	0	1 ; TOP/END LED BROKEN (Top/End LED Broken Detect)	IN/PTH00 ⑧	LE-80 board (D1) (via switch Q331 on SS board)
28	7	Always "0" (Not in use)	OUT/P133 ㉓	
	6	Always "0" (Not in use)	OUT/P132 ㉔	
	5	1 ; NON-INTERRACE (Non-interrace Control)	OUT/P131 ㉕	VM board (IC801 ⑩)
	4	0 ; FWD TENSION, 1 ; REV TENSION (Tension VR F/R Select)	OUT/P130 ㉖	SS board (IC314 ⑨) (via switch Q301 on SS board)
	3	0 ; TOP/END LED ON (Top/End LED Control)	OUT/P123 ⑲	SS board (Q331)
	2	1 ; TEN-REG CHARGE CLEAR (Tension Regulator Charge Clear Control)	OUT/P122 ⑳	SS board (Q303)
	1	0 ; TEN-REG ON, 1 ; PROGRAM TENSION (Supply Reel Tension Mode Select)	OUT/P121 ㉑	SS board (IC315 ⑪)
	0	0 ; TORQUE, 1 ; SPEED (Reel Control Mode)	OUT/P120 ㉒	SS board (IC303 ⑨ to ⑪) (via inverter Q351 on SS board)
29	7 to 4	Always "0" (Not in use)	———	
	3	Always "1" (Not in use)	OUT/P143 ㉗	
	2	Always "1" (Not in use)	OUT/P142 ㉘	
	1	1 ; CTL REC MUTE (CTL REC Muting Control)	OUT/P141 ㉙	DUS-534 or SS board (IC500 ⑥) (via Q515 on DUS-534 or SS board)
	0	1 ; CNR OFF (VM Board Disable Control)	OUT/P140 ㊴	Not in use.

Table 8 Menu No. 30 to No. 35

<table>
<tr><th>Menu No.</th><th>Bit No.</th><th>Data Contents
(In hexadecimal notation unless otherwise noted)</th><th>Microprocessor (IC101) I/O port</th><th>Connection Companion</th></tr>
<tr><td rowspan="5">30</td><td>7</td><td>1 ; STOP KEY ON</td><td rowspan="5">IN/SI0 ㊺
(Input as serial data)</td><td rowspan="5">KY board (IC101 ㉞)</td></tr>
<tr><td>6</td><td>1 ; EJECT KEY ON</td></tr>
<tr><td>5</td><td>1 ; F FWD KEY ON</td></tr>
<tr><td>4</td><td>1 ; REW KEY ON</td></tr>
<tr><td>3 to 0</td><td>Always “0” (Not in use)</td></tr>
<tr><td rowspan="7">31</td><td>7</td><td>1 ; RESET KEY ON[*4]</td><td rowspan="7">IN/SI0 ㊺
(Input as serial data)</td><td rowspan="7">KY board (IC101 ㉞)</td></tr>
<tr><td>6</td><td>1 ; REC KEY ON</td></tr>
<tr><td>5, 4</td><td>Always “0” (Not in use)</td></tr>
<tr><td>3</td><td>1 ; PAUSE KEY ON</td></tr>
<tr><td>2</td><td>1 ; PLAY KEY ON</td></tr>
<tr><td>1</td><td>1 ; FWD SEARCH KEY ON[*1]</td></tr>
<tr><td>0</td><td>1 ; REV SEARCH KEY ON[*1]</td></tr>
<tr><td rowspan="5">32</td><td>7</td><td>1 ; REMOTE STOP IN</td><td rowspan="5">IN/SI0 ㊺
(Input as serial data)</td><td rowspan="5">KY board (IC101 ㉞)
(Serial data from Remote Control Unit inputs to IC101 ㊴ on KY board from front panel's REMOTE connector via Q101 on KY board)</td></tr>
<tr><td>6</td><td>1 ; REMOTE EJECT IN</td></tr>
<tr><td>5</td><td>1 ; REMOTE F FWD IN</td></tr>
<tr><td>4</td><td>1 ; REMOTE REW IN</td></tr>
<tr><td>3 to 0</td><td>REMOTE SHUTTLE SPEED<table><tr><td>Indication Value</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr><tr><td>Speed (times)</td><td>0.03</td><td>0.1</td><td>0.2</td><td>0.5</td><td>1.0</td><td>2.0</td><td>5.0</td><td>10</td></tr></table></td></tr>
<tr><td rowspan="7">33</td><td>7</td><td>Always “0” (Not in use)</td><td rowspan="7">IN/SI0 ㊺
(Input as serial data)</td><td rowspan="7">KY board (IC101 ㉞)
(Serial data from Remote Control Unit inputs to IC101 ㊴ on KY board from front panel's REMOTE connector via Q101 on KY board)</td></tr>
<tr><td>6</td><td>1 ; REMOTE REC IN</td></tr>
<tr><td>5, 4</td><td>Always “0” (Not in use)</td></tr>
<tr><td>3</td><td>1 ; REMOTE PAUSE IN</td></tr>
<tr><td>2</td><td>1 ; REMOTE PLAY IN</td></tr>
<tr><td>1</td><td>1 ; REMOTE SHUTTLE IN</td></tr>
<tr><td>0</td><td>1 ; REMOTE SHUTTLE FWD IN
0 ; REMOTE SHUTTLE REV IN</td></tr>
<tr><td rowspan="5">34</td><td>7</td><td>1 ; OPTION STOP IN</td><td rowspan="5">IN/SI0 ㊺
(Input as serial data)</td><td rowspan="5">OPTION board
33-pin interface board : SVBK-100
34-pin interface board : SVBK-110
RS-232C interface board : SVBK-120</td></tr>
<tr><td>6</td><td>1 OPTION EJECT IN</td></tr>
<tr><td>5</td><td>1 OPTION F FWD IN</td></tr>
<tr><td>4</td><td>1 OPTION REW IN</td></tr>
<tr><td>3 to 0</td><td>OPTION SHUTTLE SPEED<table><tr><td>Indication Value</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr><tr><td>Speed (times)</td><td>0.03</td><td>0.1</td><td>0.2</td><td>0.5</td><td>1.0</td><td>2.0</td><td>5.0</td><td>10</td></tr></table></td></tr>
<tr><td rowspan="7">35</td><td>7</td><td>Always “0” (Not in use)</td><td rowspan="7">IN/SI0 ㊺
(Input as serial data)</td><td rowspan="7">OPTION board
33-pin interface board : SVBK-100
34-pin interface board : SVBK-110
RS-232C interface board : SVBK-120</td></tr>
<tr><td>6</td><td>1 OPTION REC IN</td></tr>
<tr><td>5, 4</td><td>Always “0” (Not in use)</td></tr>
<tr><td>3</td><td>1 ; OPTION PAUSE IN</td></tr>
<tr><td>2</td><td>1 ; OPTION PLAY IN</td></tr>
<tr><td>1</td><td>1 ; OPTION SHUTTLE IN</td></tr>
<tr><td>0</td><td>1 ; OPTION SHUTTLE FWD IN
0 ; OPTION SHUTTLE REV IN</td></tr>
</table>

[*1] Always “0” in the microcomputer data display mode.

Table 9 Menu No. 36 and No. 37

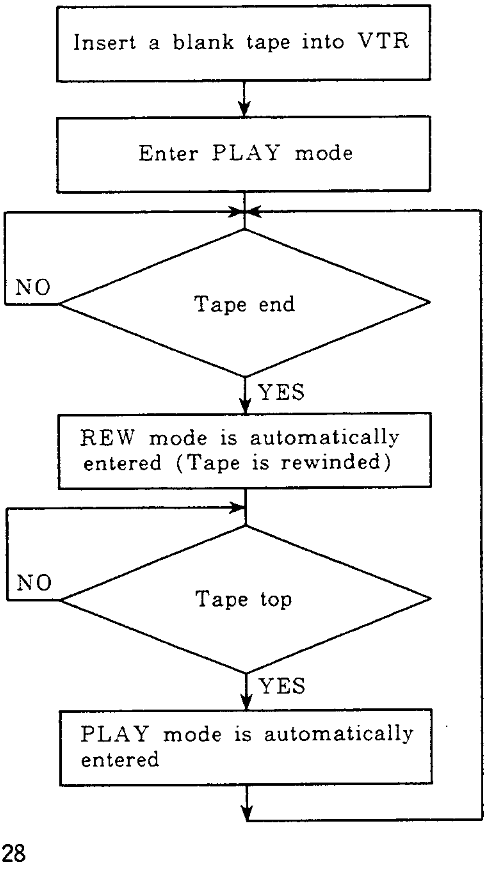
Menu No.	Bit No.	Data Contents (In hexadecimal notation unless otherwise noted)	Microprocessor (IC101) I/O port	Connection Companion
36	7, 6	(Not in use)	OUT/SO0 ㊻ (Output as serial data)	KY board (IC101 ㉝)
	5	1 ; F FWD LED ON		
	4	1 ; REW LED ON		
	3 to 0	Always "0" (Not in use)		
37	7	Always "0" (Not in use)	OUT/SO0 ㊻ (Output as serial data)	KY board (IC101 ㉝)
	6	1 ; REC LED ON		
	5, 4	Always "0" (Not in use)		
	3	1 ; PAUSE LED ON		
	2	1 ; PLAY LED ON		
	1	1 ; FWD SEARCH LED ON		
	0	1 ; REV SEARCH LED ON		

2-15-4. Aging Mode

When Menu No. 38 is selected, the VTR enters the aging mode.
However, only setting the Menu Number to 38 will have no effect.
For the operating procedure, refer to the flowchart shown below.
The displayed data will not be affected when the aging mode is executed.

Caution : NEVER perform aging if not needed.
This will result in damaged head and deteriorated life, as well as adverse effects on ohter portions.

Aging Mode Sequence


Insert a blank tape into VTR
Enter PLAY mode
NO
Tape end
YES
REW mode is automatically entered (Tape is rewinded)
NO
Tape top
YES
PLAY mode is automatically entered

2-16. ERROR CODES

This set provides an error display function that displays the error if a trouble condition occurs.
When a failure is detected in the normal operating state, the error is immediately displayed on the time counter display at the front.
In most cases, when an error occurs, the system enters the protective action and stops to operate.
Each error is displayed by its error code and the current operating state at the occurrence of the error is displayed by its sub error code.
The contents of the error codes are given below.
Note that to display the sub error code, press the DATA button.

Error code list

Error code	Sub error code	Contents	Error detecting method	Possible failure
Err-01		**No reel rotation/reel stoppage** • The reel motor would not operate for a specific time in the reel operation mode, the tape protective action was executed.	The rotational speed obtained from the FG output of Supply or Takeup reel motor is zero for a specific time.	• Cut or coiling tape • Improper operation of RVS guide • Improper operation of tension regulator assembly (TG-2 guide) • Faulty circuit in tension sensor system • Poor adjustment of tape tension/torque • Malfunction of capstan motor • Malfunction of pinch solenoid • Improper operation of pinch roller block assembly • Improper operation of LBD brake • Faulty circuit in reel FG system • Malfunction of S/T reel motor • Break or poor connection of harness • Improper operation of reel brake • Faulty circuit in tape top/end sensor system (when an error occurred at tape top/end.)
		Incorrect direction of reel rotation • The reel motor was rotating in an incorrect direction for a specific time in the reel operation mode; the tape protective action was executed.	The direction of reel rotation obtained from the FG output of Supply or Takeup reel motor is incorrect for a specific time.	
	06 .... 09 .... 0A	Failure detected in F FWD/REV mode. Failure detected in search mode. Failure detected in playback/record mode.		
Err-03	00	**No capstan rotation** • The capstan motor would not operate for a specific time; the tape protective action was executed.(*1)	The rotational speed obtained from the FG output of capstan motor is zero for a specific time.	• Poor adjustment of capstan FG duty ratio • Malfunction of capstan motor • Faulty circuit in capstan FG system • Break or poor connection of harness
		No capstan servo operation • The capstan servo would not operate for a specific time; the tape protective action was executed.	The rotational speed obtained from the FG output of capstan motor is not locked within a specific time.	

*1; If the capstan won't rotate in the playback/record mode or if the capstan stops on the way in the playback/record/search mode, the system will first of all detect the condition that Takeup reel won't rotate or stops and Err-1 be activated.

Error code	Sub error code	Contents	Error detecting method	Possible failure
Err-04	00	**No drum rotation/drum stoppage** • The drum motor would not rotate for a specific time in the drum rotation mode; the tape protective action was executed.	The rotational speed obtained from the FG output of drum motor is less than the specified value for a specific time.	• Tape coiling around drum • Break or poor connection of harness • Malfunction of drum motor • Faulty circuit in drum FG/PG system
		No drum servo operation • The drum servo would not operate within a specific time in the record mode; the tape protective action was executed.	With servo reference locked, the rotational speed from the FG output of drum motor and the phase of rotation from the PG output are not locked within a specific time.	
Err-05		**Incorrect increase of reel rotational speed** • The rotational speed of reel motor became incorrectly faster in the reel operation mode; the tape protective action was executed.(*2)	The rotational speed obtained from the FG output of reel motor is more than the specified value for a specific time.	• Cut tape • Looseness of set screws for securing the reel base assembly • Damaged reel base assembly
	00	Failure detected in PAUSE mode.		
	06	Failure detected in F FWD/REW mode.		
	07	Failure detected in unthreading.		
	09	Failure detected in search mode.		
	0A....	Failure detected in playback/record mode.		

Error code	Sub error code	Contents	Error detecting method	Possible failure
Err-20	Unable to display	See Err-23(*5)		
	02....	**Failure in threading operation** • The threading operation was not completed within a specific time; the operation was stopped. (switch from threading end state to STOPped state) (switch from STOPped state to unthreading end state)	The threading operation was not completed in a specific time after commanded by system microcomputer.	• Damaged projection of BC roller assembly • Failure in reel motor brake operation • Malfunction of loading motor • Improper gear position of loading unit • Improper detection by cam mode sensor • Break or poor connection of harness
	03....	**Failure in unthreading operation** • The unthreading operation was not completed within a specific time; the operation was stopped. (switch from unthreading end state to STOPped state) (switch from STOPped state to threading end state)	The unthreading operation was not completed in a specific time after commanded by system microcomputer.	
	05.... (06)(*4)	**Failure of cassette compartment operation** • The cassette up/down operation was not completed within a specific time; the operation was stopped.	The cassette up/down operation was not completed in a specific time after commanded by system microcomputer.	• Malfunction of cassette compartment motor • Improper operation of cassette compartment • Malfunction of cassette in/miss REC switch • Malfunction of cassette down switch • Break or poor connection of harness
	06....	**Reel motor won't stop** • When the mode is switched from F FWD/REW to STOP mode, the reel motor would not stop within a specific time; the protective action was executed.(*2)	The rotational speed obtained from the FG output of reel motor was not zero in a specific time.	• Cut tape • Faulty circuit in reel FG system
	30....	**Failure in communication with reel microcomputer** • The system microcomputer was unable to communicate with the reel microcomputer; the protective action was executed.(*2)	The system microcomputer failed to make a correct communication with the reel microcomputer continuously by specific times.(*3)	• Failure in 4 MHz clock of reel microcomputer • Fault in enable device decode circuit of serial interface • Fault in reel microcomputer

∗2; If tape is cut, the protective action may fail to be executed and the reel motor may continue to rotate.
In this case, the power of VTR should be turned off to stop the motor to rotate.

∗3; After this error is displayed, if the communication failure is avoided, the error display will be released without turning off the power.

∗4; For the system microcomputer up to version 2.2, it should be noted that the sub error code 05 associated with Err-20 is displayed as 06.
For the system microcomputer version 2.25 and after, the sub error code 06 is displayed.

∗5; For the system microcomputer up to version 2.2, it should be noted that Err-23 is displayed as Err-20.
In this case, the sub error code is not allowed to be displayed.
For the system microcomputer version 2.25 and after, Err-23 is displayed.

Error code	Sub error code	Contents	Error detecting method	Possible failure
Err-22	00....	There was a failure in communication with the option (SVBK-100/110/120); the protective action was executed.	The system microcomputer failed to make a correct communication with the microcomputer on the option side continuously by specific times.(*3)	• Break or poor connection of harness • Failure in clock of microcomputer on option side • Fault in enable device decode circuit of serial interface • Fault in microcomputer on option side
	01—05	(Reserved code)		
Err-23 (*5)	Unable to display	There was a failure in communication from KY-219 board to SS-49A board; the protective action was executed.	The system microcomputer judged that the data sent from KY board microcomputer is faulty, and then the KY board microcomputer receives that information from the system microcomputer.	• Break or poor connection of harness(*8) • Fault in microcomputer of KY board
Err-30	00	Failure in the tension regulator LED was detected; the protective action was executed.	The voltage of the tension regulator LED failure detection input to the reel microcomputer was set at High level (logic level) continuously for a specific time.	• Fault in tension regulator LED • Break or poor connection of harness • Fault in detection circuit • Fault in reel microcomputer
Err-31	00	Failure in the tape top/end LED was detected; the protective action was executed.	The voltage of the tape top/end LED failure detection input to the reel microcomputer was set at High level (logic level) continuously for a specific time.	• Fault in tape top/end LED • Break or poor connection of harness • Fault in detection circuit • Fault in LED ON/OFF circuit • Fault in reel microcomputer
Err-32	00	LED failure in the cam mode sensor was detected; the protective action was executed.(*6)	The voltage of the cam mode LED failure detection input to the system microcomputer was set at High level (logic level) continuously for a specific time.	• Fault in cam mode sensor LED • Break or poor connection of harness • Fault in detection circuit • Fault in system microcomputer
Err-90	Unable to display	There was a failure in communication from SS-49A board to KY-219 board; the error was displayed.(*3, *7)	The KY board microcomputer judged the data sent from system microcomputer as faulty, and then that was continued for a specific time.	• Break or poor connection of harness(*9) • System microcomputer 8 MHz clock failure • Faulty enable device decode circuit of serial interface • Faulty system microcomputer

*3; After this error is displayed, if the communication failure is avoided, the error display will be released without turning off the power.

*5; For the system microcomputer up to version 2.2, it should be noted that Err-23 is displayed as Err-20. In this case, the sub error code is not allowed to be displayed.

*6; When power is turned on with cassette inserted, if Err-32 is displayed, Err-20 (sub error code 03) will be displayed in a while.

*7; If a failure is present in the system microcomputer, the protective action might not be executed. In this case, turn off the power of VTR to stop the operation.

*8; Break of the harness connected to pin 6 of CN151 is the most probable fault.

*9; Even when the LED display on the front panel is faulty, if control of cassette and tape run is permitted by button operation or with the remote control, break of the harness connected to pin 5 of CN151 is the most probable fault.

SECTION 12
SEMICONDUCTOR PIN ASSIGNMENTS

ICs, transistors and diodes that functions are equivalent are described here. Therefore, incompatible device names may be described together. For parts replacement, refer to the Spare Parts section in this manual.

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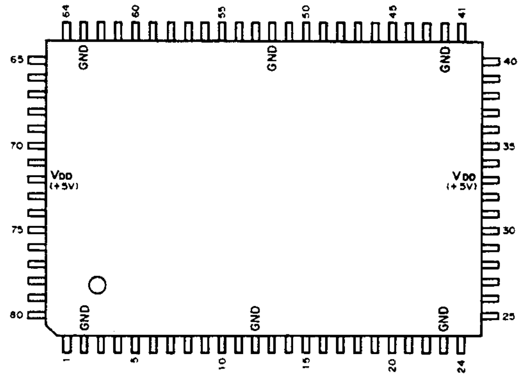
The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

CXD1227Q (SONY)

C-MOS DIGITAL CHROMA ENCODER/VERTICAL ENHANCER
– TOP VIEW –


64
60
55
50
45
41
65
70
75
80
40
35
30
25
GND
GND
GND
GND
GND
GND
VDD (+5V)
VDD (+5V)
1
5
10
15
20
24

PIN ASSIGNMENT (VDD = + 5V)

PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	O	TST0	21	I	CMR3	41	I	HPR2	61	I	CCKI
2	–	GND	22	I	CMR2	42	–	GND	62	O	CCKO
3	O	TST1	23	–	GND	43	O	DOC	63	–	GND
4	O	RC0	24	I	CMR1	44	I	HPR1	64	O	XOUT
5	O	RC1	25	I	CMR0	45	I	HPR0	65	I	XIN
6	O	RC2	26	O	FRM0	46	I	HBD3	66	O	USCO
7	O	RC3	27	O	FRM1	47	I	HBD2	67	I	CLRI
8	O	RC4	28	O	JPI0	48	I	HBD1	68	O	PCOM
9	O	RC5	29	O	JPI1	49	I	HBD0	69	I	CTLZ
10	O	RC6	30	O	RFSC	50	I	BNS1	70	I	FSIG
11	O	RC7	31	I	CS0	51	I	BNS0	71	I	FREF
12	–	GND	32	I	CS1	52	–	GND	72	O	RY0
13	I	YMR7	33	–	VDD	53	I	YCKI	73	–	VDD
14	I	YMR6	34	I	SDAM	54	I	RVMT	74	O	RY1
15	I	YMR5	35	I	PALP	55	I	BDR	75	O	RY2
16	I	YMR4	36	I	OFSB	56	I	YCFR	76	O	RY3
17	I	YMR3	37	I	BDL7	57	I	RCDT	77	O	RY4
18	I	YMR2	38	I	BDL6	58	I	RUV1	78	O	RY5
19	I	YMR1	39	I	RSYC	59	I	RUV0	79	O	RY6
20	I	YMR0	40	I	YTIM	60	O	REVN	80	O	RY7

INPUT

BDR : BORDER TIMING INPUT
*1 BDL6, 7 : Y BORDER LEVEL SELECT INPUTS
*2 BNS0, 1 : SOLORIZATION RESOLUTION SELECT
CCKI : CHROMA CLOCK INPUT (4fsc)
CLRI : CLEAR INPUT
CMR0 – 3 : CHROMA DATA INPUTS
*3 CS0, 1 : CHROMA SYSTEM SELECT INPUTS
CTLZ : PHASE COMPARATOR OUT CONTROL INPUT
FREF : PHASE COMPARATOR REFERRENCE SIGNAL INPUT
FSIG : PHASE COMPARATOR SIGNAL INPUT
*4 HBD0, 1 : U-AXIS BORDER LEVEL INPUTS
*5 HBD2, 3 : V-AXIS BORDER LEVEL INPUTS
*6 HPR0 – 2 : H PROCESS INPUTS
OFSB : OFF SET BINARY MODE INPUT
PALP : PAL PHASE CONTROL INPUT
RCDT : READ FRAMING CODE TIMING INPUT
RSYC : READ SYNC INPUT
RUV0 – 1 : READ U/V TIMING INPUTS
RVMT : READ VIDEO MUTE INPUT
SDAM : D/A MODE SELECT INPUT
XIN : CHROMA CLOCK INPUT FOR OSCILLATOR
YCKI : Y CLOCK INPUT (910f_H)
YCFR : Y/C FRAMING ON/OFF SELECT INPUT
YMR0 – 7 : Y DATA INPUTS
YTIM : Y TIMING CONTROL INPUT

OUTPUT

CCKO : CHROMA CLOCK OSCILLATOR OUTPUT (4fsc)
DOC : DROP OUT CONTROL MONITOR OUTPUT
FRM0, 1 : CHROMA FRAMING CODE OUTPUTS
JPI0, 1 : ID CODE MONITOR OUTPUTS (D2, D3)
PCOM : PHASE COMPARATOR OUTPUT
RC0 – 7 : READ CHROMA D/A OUTPUTS
REVN : READ EVEN/$\overline{\text{ODD}}$ FIELD MONITOR OUTPUT
RFSC : READ fsc OUTPUT
RY0 – 7 : READ Y D/A OUTPUTS
TST0, 1 : TEST TERMINALS
USCO : USER CODE FOR OPTION
XOUT : CHROMA CLOCK OUTPUT FOR OSCILLATOR

TABLE 1
*1 BORDER LEVEL

BDL7	BDL6	LEVEL
0	0	8H (- 50IRE)
0	1	48H (- 100IRE)
1	0	C8H (CLAMP LEVEL)
1	1	C8H (0IRE)

TABLE 2
*2 SOLORIZATION RESOLUTION

INPUTS		OUTPUTS				
BNS0	BNS1	RY0	RY1	RY2	RY3	RY4
0	0	0	0	1	X	X
0	1	0	0	0	1	X
1	0	0	0	0	0	1
1	1	X	X	X	X	X

TABLE 3
*3 CHROMA SYSTEM MODE SELECTION

CS1	CS0	MODE
0	0	NTSC
0	1	PAL
1	0	CHROMA BASE BAND OUT
1	1	(PAL)

TABLE 4
*4 U-AXIS BORDER LEVEL

HBD1	HBD0	LEVEL
0	0	20 IRE
0	1	– 20 IRE
1	0	– 30 IRE
1	1	0 IRE

TABLE 5
*5 V-AXIS BORDER LEVEL

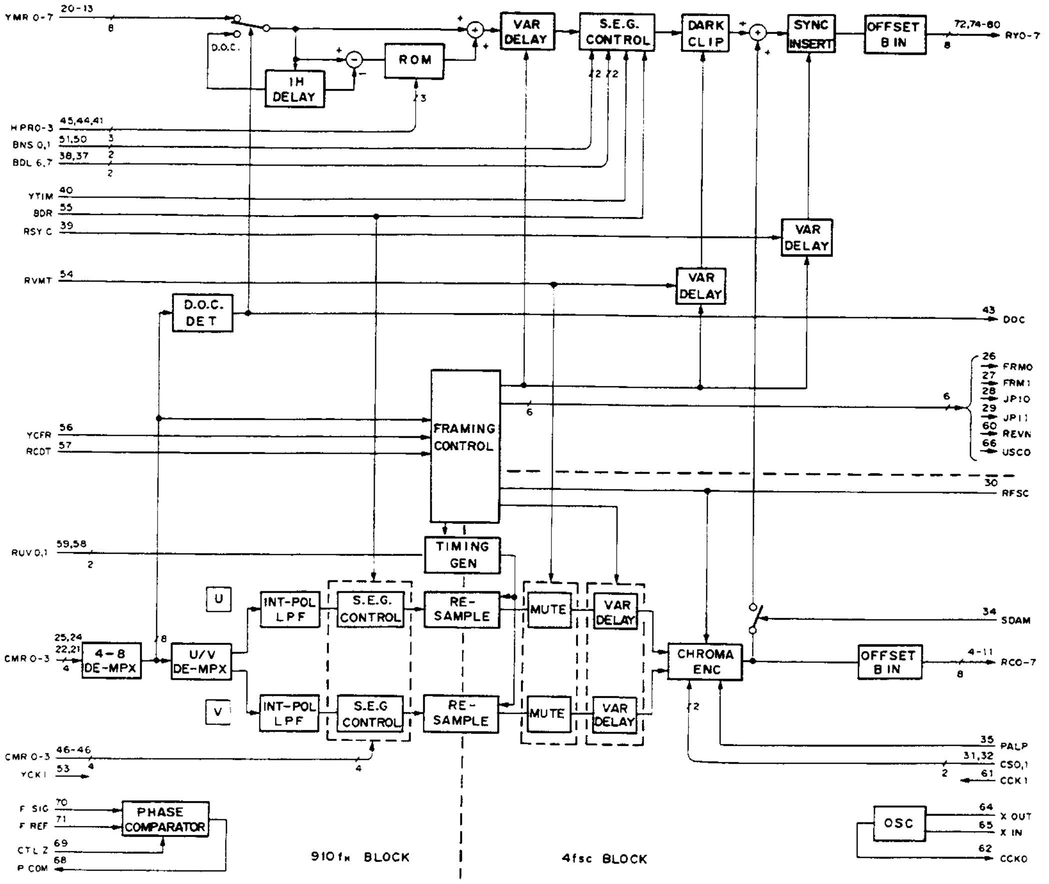
HBD3	HBD2	LEVEL
0	0	20 IRE
0	1	– 20 IRE
1	0	– 30 IRE
1	1	0 IRE

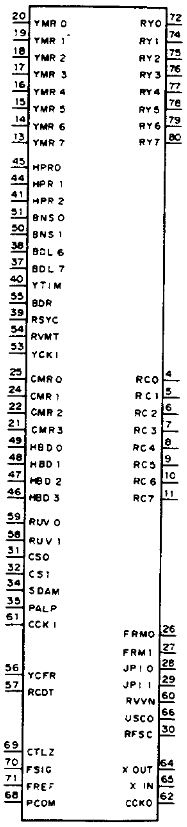
TABLE 6
*6 H PROCESS MODE SELECTION

HPR2	HPR1	HPR0	OPERATION
0	0	0	V-ENHANCE (SOFT)
0	0	1	V-ENHANCE (SOFT)
0	1	0	V-ENHANCE (MIDDLE)
0	1	1	V-ENHANCE (STRONG)
1	0	0	MIX RATIO H_T:H_P=1:1
1	0	1	MIX RATIO H_T:H_P=1:3
1	1	0	MIX RATIO H_T:H_P=3:1
1	1	1	NO PLAY

0 : LOW LEVEL
1 : HIGH LEVEL

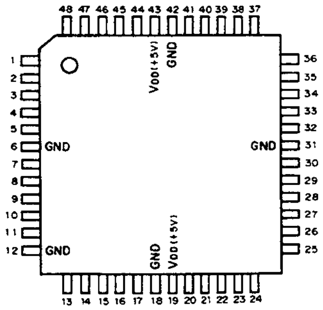
H_T = THROUGH
H_P = 1H DELAY


YMR 0-7
20-13
8
D.O.C.
1H DELAY
ROM
VAR DELAY
S.E.G. CONTROL
DARK CLIP
SYNC INSERT
OFFSET B IN
72,74-80
RY0-7
HPR0-3
45,44,41
BNS 0,1
51,50
BDL 6,7
38,37
YTIM 40
BDR 55
RSYC 39
VAR DELAY
RVMT 54
VAR DELAY
D.O.C. DET
43 DOC
26 FRM0
27 FRM1
28 JP10
29 JP11
60 REVN
66 USCO
YCFR 56
RCDT 57
FRAMING CONTROL
30 RFSC
RUV 0,1
59,58
TIMING GEN
U
V
INT-POL LPF
S.E.G. CONTROL
RE-SAMPLE
MUTE
VAR DELAY
CHROMA ENC
OFFSET B IN
34 SDAM
4-11
RC0-7
CMR 0-3
25,24 22,21
4-8 DE-MPX
U/V DE-MPX
35 PALP
31,32 CS0,1
61 CCK1
CMR 0-3
46-46
YCKI 53
F SIG 70
F REF 71
PHASE COMPARATOR
CTLZ 69
P COM 68
OSC
64 X OUT
65 X IN
62 CCKO
910fH BLOCK
4fsc BLOCK


20 YMR 0
19 YMR 1
18 YMR 2
17 YMR 3
16 YMR 4
15 YMR 5
14 YMR 6
13 YMR 7
45 HPR0
44 HPR 1
41 HPR 2
51 BNS 0
50 BNS 1
38 BDL 6
37 BDL 7
40 YTIM
55 BDR
39 RSYC
54 RVMT
53 YCKI
25 CMR 0
24 CMR 1
22 CMR 2
21 CMR 3
49 HBD 0
48 HBD 1
47 HBD 2
46 HBD 3
59 RUV 0
58 RUV 1
31 CS0
32 CS1
34 SDAM
35 PALP
61 CCK I
56 YCFR
57 RCDT
69 CTLZ
70 FSIG
71 FREF
68 PCOM
RY0 72
RY1 74
RY2 75
RY3 76
RY4 77
RY5 78
RY6 79
RY7 80
RC0 4
RC1 5
RC2 6
RC3 7
RC4 8
RC5 9
RC6 10
RC7 11
FRM0 26
FRM1 27
JP10 28
JP11 29
RVVN 60
USCO 66
RFSC 30
X OUT 64
X IN 65
CCKO 62

CXD1229Q (SONY) FLAT PACKAGE
MB87647 (FUJITSU) FLAT PACKAGE

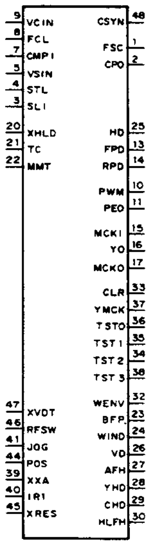
C-MOS AUTOMATIC FREQUENCY CONTROL (AFC) ⁄SYNC SEPARATOR
– TOP VIEW –



VDD(+5V)
GND
GND
GND
GND
GND
VDD(+5V)

PIN ASSIGNMENT (V$_{DD}$ = + 5V)

PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	I/O	FCS	13	O	FPD	25	O	HD	37	I	YMCK
2	I/O	CPO	14	O	RPD	26	O	VD	38	O	TST3
3	I	SLI	15	I	MCKI	27	O	AFH	39	I/O	XXA
4	I	STL	16	O	YO	28	O	YHD	40	I/O	IR1
5	I	VSIN	17	O	MCKO	29	O	CHD	41	I	JOG
6	–	GND	18	–	GND	30	O	HLFH	42	–	GND
7	I	CMPI	19	–	V$_{DD}$	31	–	GND	43	–	V$_{DD}$
8	I	FCL	20	I	XHLD	32	O	WEVN	44	I	POS
9	I	VCIN	21	O	TC	33	I	CLR	45	O	XRES
10	I	PWM	22	I	MMT	34	I	TST2	46	I	RFSW
11	O	PEO	23	O	BFP	35	I	TST1	47	I	XVDT
12	–	GND	24	O	WIND	36	I	TST0	48	O	CSYN

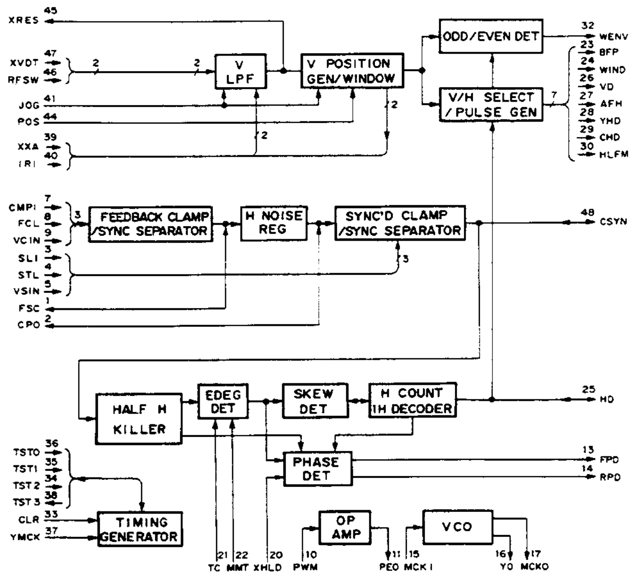


VCIN
FCL
CMPI
VSIN
STL
SLI
XHLD
TC
MMT
XVDT
RFSW
JOG
POS
XXA
IR1
XRES
CSYN
FSC
CPO
HD
FPD
RPD
PWM
PEO
MCKI
YO
MCKO
CLR
YMCK
TSTO
TST1
TST2
TST3
WENV
BFP
WIND
VD
AFH
YHD
CHD
HLFH

INPUT
CLR : DIRECT CLEAR INPUT
CMPI : FEED BACK CLAMP SLICE LEVEL INPUT
FCL : FEED BACK CLAMP SYNC CHIP LEVEL INPUT
JOG : REFERENCE CONTROL INPUT
MCKI : CLOCK (VCO) INVERTER INPUT
MMT : MONO MULTI TEST PIN (H : NORMAL) INPUT
POS : PHASE REFERENCE SELECT
PWM : OP AMP INPUT
RFSW : RF SW PULSE INPUT
SLI : SYNC CLAMP SLICE LEVEL INPUT
STL : SYNC CLAMP SYNC CHIP LEVEL INPUT
TST0 : L : NORMAL⁄H : TEST MODE INPUT
TST1, 2 : AFC LOCK PHASE COARSE ADJUST INPUTS
VCIN : FEED BACK CLAMP VIDEO INPUT
VSIN : SYNC CLAMP VIDEO INPUT
XHLD : H : AFC ERROR ACTIVE⁄L : AFC ERROR HOLD INPUT
XVDT : V DETECT COMPOSITE SYNC INPUT
YMCK : MASTER CLOCK INPUT

OUTPUT
AFH : AFC H DRIVE OUTPUT
BFP : BURST FLAG PULSE OUTPUT
CHD : H SYNC OUTPUT FOR BURST DETECT
FPD : AFC SUB LOOP PHASE ERROR OUTPUT
HLFH : $1/2f_H$ (≒7.5 kHz) OUTPUT
MCKO : CLOCK (VCO) INVERTER OUTPUT ($910f_H$)
PEO : OP AMP OUTPUT
RPD : AFC MAIN LOOP PHASE ERROR OUTPUT
TST3 : L : NORMAL, H : TEST MODE OUTPUT
VD : VERTICAL SYNC DETECT OUTPUT
WEVN : WRITE EVEN⁄ODD FIELD DETECT OUTPUT
WIND : WINDOW COMPARATOR OUTPUT FOR V-PLL
XRES : V DETECT LPF OUTPUT
YO : CLOCK (VCO) INVERT OUTPUT
YHD : PEDESTAL CLAMP TIMING OUTPUT

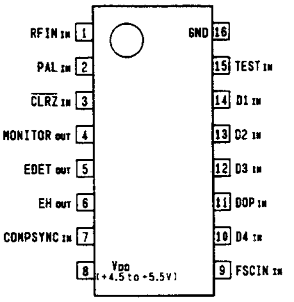
INPUT/OUTPUT
CPO : CLAMP PULSE INPUT⁄OUTPUT
CSYN : CLAMP SYNC SEPARATE INPUT⁄OUTPUT
FCS : FEED BACK CLAMP SYNC SEPARATE INPUT⁄OUTPUT
HD : AFC H DIRECT INPUT⁄OUTPUT
IR1 : MONITOR PIN FOR TEST INPUT⁄OUTPUT
TC : AFC LOCK PHASE FINE ADJUST INPUT⁄OUTPUT
XXA : MONITOR PIN FOR TEST INPUT⁄OUTPUT



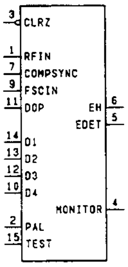
XRES
XVDT
RFSW
JOG
POS
XXA
IRI
V LPF
V POSITION GEN/WINDOW
ODD/EVEN DET
V/H SELECT /PULSE GEN
WENV
BFP
WIND
VD
AFH
YHD
CHD
HLFM
CMPI
FCL
VCIN
SLI
STL
VSIN
FSC
CPO
FEEDBACK CLAMP /SYNC SEPARATOR
H NOISE REG
SYNC'D CLAMP /SYNC SEPARATOR
CSYN
HALF H KILLER
EDEG DET
SKEW DET
H COUNT 1H DECODER
HD
PHASE DET
FPD
RPD
TSTO
TST1
TST2
TST3
CLR
YMCK
TIMING GENERATOR
OP AMP
VCO
TC
MMT
XHLD
PWM
PEO
MCK I
YO
MCKO

CXD2107M (SONY) FLAT PACKAGE

C-MOS DEFINITION DETECTOR
– TOP VIEW –



RFIN IN 1
PAL IN 2
CLRZ IN 3
MONITOR OUT 4
EDET OUT 5
EH OUT 6
COMPSYNC IN 7
8 VDD (+4.5 to +5.5V)
GND 16
15 TEST IN
14 D1 IN
13 D2 IN
12 D3 IN
11 DOP IN
10 D4 IN
9 FSCIN IN

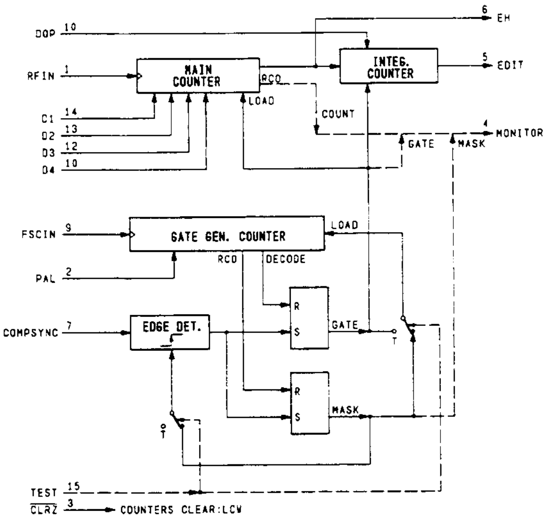


CLRZ
RFIN
COMPSYNC
FSCIN
DOP
EH
EDET
D1
D2
D3
D4
MONITOR
PAL
TEST

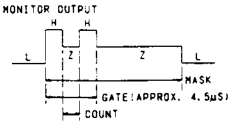
INPUT
CLRZ : CLEAR SIGNAL INPUT FOR INTERNAL COUNTERS
COMPSYNC: COMPOSITE SYNC INPUT
D1–D4 : LOAD DATA INPUTS FOR MAIN COUNTER (D0=HIGH, FIXED DATA)
DOP : DROPOUT CONPENSATION PULSE INPUT
FSCIN : COLOR SUBCARRIER INPUT, NTSC=3.579545MHz, PAL=4.433619MHz
PAL : OPERATION MODE SELECT INPUT, HIGH=PAL, LOW=NTSC
RFIN : PLAYBACK Y RF SIGNAL INPUT
TEST : TEST CONTROL INPUT, NORMAL=LOW

OUTPUT
EDET : E* MODE DETECTION OUTPUT, CONTINUOUS 16H
EH : E* MODE DETECTION OUTPUT, DISTINGUISH IN 1H
MONITOR : MONITOR OUTPUT OF COUNT, GATE, AND MASK PULSES

NOTE
E* : EXTENDED DEFINITION



DOP
RFIN
D1
D2
D3
D4
MAIN COUNTER
RCO
LOAD
INTEG. COUNTER
EH
EDIT
COUNT
GATE
MASK
MONITOR
FSCIN
PAL
GATE GEN. COUNTER
LOAD
RCO
DECODE
COMPSYNC
EDGE DET.
R
S
GATE
MASK
T
TEST
CLRZ
COUNTERS CLEAR:LOW

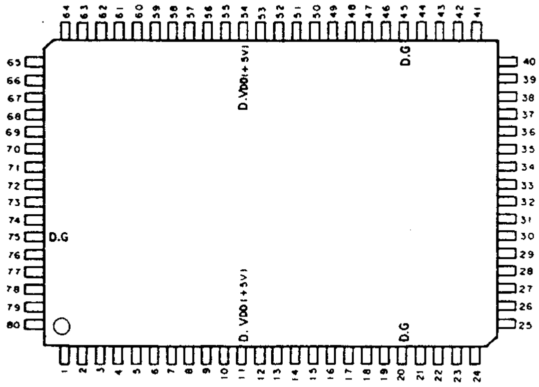


MONITOR OUTPUT
H
H
L
Z
Z
L
MASK
GATE(APPROX. 4.5μS)
COUNT

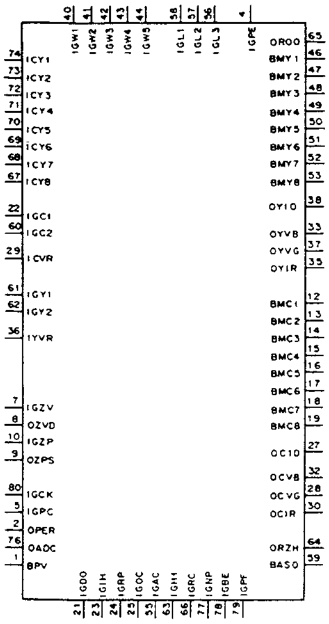
CXD2105AQ (SONY) FLAT PACKAGE

C-MOS DIGITAL COMB FILTER FOR VTR'S

– TOP VIEW –


D.VDD(+5V)
D.G
D.G
D.VDD(+5V)
D.G

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	BPV	21	I	IGD0	41	I	IGW2	61	I	IGY1
2	O	OPER	22	I	IGC1	42	I	IGW3	62	I	IGY2
3	–	A.VDD P	23	I	IGIH	43	I	IGW4	63	I	IGH1
4	I	IGPE	24	I	IGRP	44	I	IGW5	64	O	ORZH
5	I	IGPC	25	I	IGOC	45	–	D.G	65	O	OR00
6	–	A.G P	26	–	A.VDD C	46	I/O	BMY1	66	I	IGRC
7	I	IGZV	27	O	OCIO	47	I/O	BMY2	67	I	IYC8
8	O	OZVD	28	O	OCVG	48	I/O	BMY3	68	I	IYC7
9	O	OZPS	29	–	ICVR	49	I/O	BMY4	69	I	IYC6
10	I	IGZP	30	O	OCIR	50	I/O	BMY5	70	I	IYC5
11	–	D.VDD	31	–	A.G C	51	I/O	BMY6	71	I	IYC4
12	I/O	BMC1	32	O	OCVB	52	I/O	BMY7	72	I	IYC3
13	I/O	BMC2	33	O	OYVB	53	I/O	BMY8	73	I	IYC2
14	I/O	BMC3	34	–	A.G Y	54	–	D.VDD	74	I	IYC1
15	I/O	BMC4	35	O	OYIR	55	I	IGAC	75	–	D.G
16	I/O	BMC5	36	–	IYVR	56	I	IGL3	76	O	OADC
17	I/O	BMC6	37	O	OYVG	57	I	IGL2	77	I	IGNP
18	I/O	BMC7	38	O	OYIO	58	I	IGL1	78	I	IGBE
19	I/O	BMC8	39	–	A.VDD Y	59	I/O	BASO	79	I	IGPF
20	–	D.G	40	I	IGW1	60	I	IGC2	80	I	IGCK


IGW1
IGW2
IGW3
IGW4
IGW5
IGL1
IGL2
IGL3
IGPE
ICY1
ICY2
ICY3
ICY4
ICY5
ICY6
ICY7
ICY8
IGC1
IGC2
ICVR
IGY1
IGY2
IYVR
IGZV
OZVD
IGZP
OZPS
IGCK
IGPC
OPER
OADC
BPV
OROO
BMY1
BMY2
BMY3
BMY4
BMY5
BMY6
BMY7
BMY8
OYIO
OYVB
OYVG
OYIR
BMC1
BMC2
BMC3
BMC4
BMC5
BMC6
BMC7
BMC8
OCIO
OCVB
OCVG
OCIR
ORZH
BASO
IGDO
IGIH
IGRP
IGOC
IGAC
IGH1
IGRC
IGNP
IGBE
IGPF

INPUT

BPV	: EXT/INT CLOCK SELECT
ICVR	: ESTABLISHES MAXIMUM AMPLITUDE VALUE FOR OCIO (PIN 27)
IGAC	: V CORRELATION CIRCUIT ON/OFF
IGBE	: SINGLE WAVE DETECTION ON/OFF (Y/C SEPARATION MODE)
IGC1	: V CORRELATION CIRCUIT SELECT
IGC2	: CHROMA FLAT SECTION HORIZONTAL FILTER SELECT (Y/C SEPARATION MODE)
IGCK	: EXTERNAL CLOCK
IGD0	: DROPOUT CORRECTION
IGH1	: FLAT SECTION HORIZONTAL FILTER SELECT (Y/C SEPARATION MODE)
IGIH	: SLEW MODE SET
IGL1 – IGL3	: LIMITER LEVEL ADJUST FOR Y SIGNAL COMB FILTER
IGNP	: NTSC/PAL FORMAT SELECT
IGOC	: OUTPUT ENABLE
IGPC	: VCO CONTROL
IGPE	: TEST
IGPF	: PLL SUBCARRIER
IGRC	: DELAY LINE LENGTH ADJUST
IGRP	: Y/C SEPARATION AND PLAYBACK MODE SELECT
IGW1 – IGW5	: Y COMB FILTER DEPTH ADJUST
IGY1, IGY2	: EDGE SECTION HORIZONTAL FILTER SELECT (Y/C SEPARATION MODE)
IGZP	: 1-BIT DELAY CIRCUIT
IGZV	: VCR HEAD SWITCHING
IYC1 – IYC8	: VIDEO SIGNAL
IYVR	: ESTABLISHES MAXIMUM AMPLITUDE VALUE FOR OYIO (PIN 38)

OUTPUT

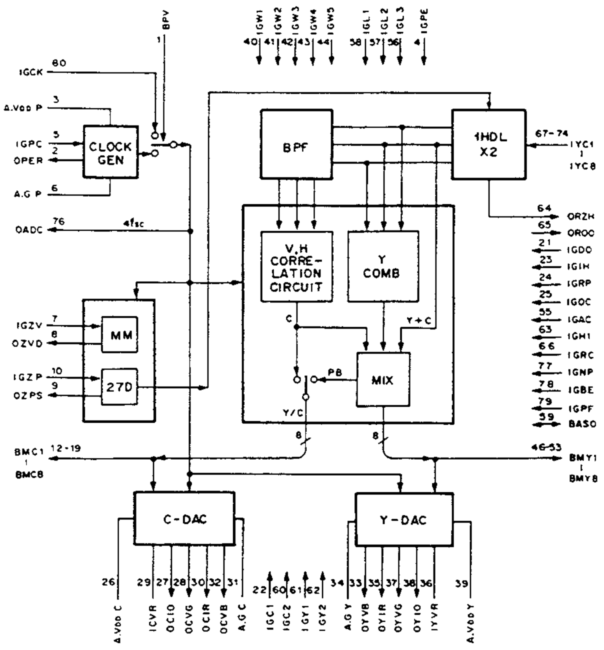
OADC	: CLOCK
OCIO	: CHROMA ANALOG SIGNAL
OCIR	: CONNECT A RESISTOR 16x LARGE THAN THE RESISTOR AT OCIO (PIN 27)
OCVB	: CONNECT TO DIGITAL GND WHICH HAS A CAPACITANCE OF UP TO 0.1 µF
OCVG	: CONNECT TO AN ANALOG POWER SUPPLY WHICH HAS A CAPACITANCE OF UP TO 0.1 µF
OPER	: PLL ERROR
OR00	: "0" IS DETECTED AT ALL INPUTS
ORZH	: 1-BIT DELAY CIRCUIT
OYIO	: Y ANALOG SIGNAL
OYIR	: CONNECT A RESISTOR 16x LARGE THAN THE RESISTOR AT OYIO (PIN 38)
OYVB	: CONNECT TO DIGITAL GND WHICH HAS A CAPACITANCE OF UP TO 0.1 µF
OYVG	: CONNECT TO AN ANALOG POWER SUPPLY WHICH HAS A CAPACITANCE OF UP TO 0.1 µF
OZPS	: 1-BIT DELAY CIRCUIT
OZVD	: VSYNC PERIOD MASK

INPUT/OUTPUT

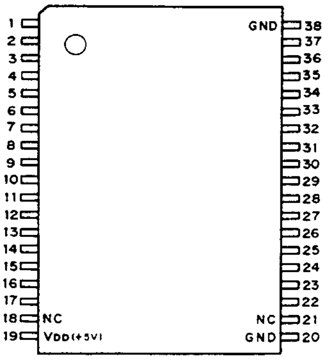
BASO	: EDGE DETECTION LEVEL SELECT (Y/C SEPARATION MODE)
BMC1 – BMC8	: CHROMA DIGITAL SIGNAL
BMY1 – BMY8	: Y DIGITAL SIGNAL

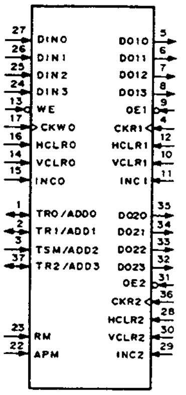
OTHER

A.G C	: ANALOG GND FOR CHROMA D/A
A.G P	: ANALOG GND FOR VCO
A.G Y	: ANALOG GND FOR Y D/A
A.VDD C	: ANALOG POWER SUPPLY FOR CHROMA D/A
A.VDD P	: ANALOG POWER SUPPLY FOR VCO
A.VDD Y	: ANALOG POWER SUPPLY FOR Y D/A
D.G	: DIGITAL GND
D.VDD	: POWER SUPPLY FOR DIGITAL


BPV
IGW1
IGW2
IGW3
IGW4
IGW5
IGL1
IGL2
IGL3
IGPE
IGCK
A.VDD P
IGPC
OPER
A.G P
OADC
4fsc
CLOCK GEN
BPF
1HDL X2
IYC1 – IYC8
V,H CORRE-LATION CIRCUIT
Y COMB
MM
27D
MIX
PB
Y/C
Y+C
C
IGZV
OZVD
IGZP
OZPS
ORZH
OROO
IGDO
IGIH
IGRP
IGOC
IGAC
IGH1
IGRC
IGNP
IGBE
IGPF
BASO
BMC1 – BMC8
BMY1 – BMY8
C-DAC
Y-DAC
A.VDD C
ICVR
OCIO
OCVG
OCIR
OCVB
A.G C
IGC1
IGC2
IGY1
IGY2
A.G Y
OYVB
OYIR
OYVG
OYIO
IYVR
A.VDD Y

CXK1206AM (SONY) FLAT PACKAGE
CXK1206M (SONY) FLAT PACKAGE
C-MOS VIDEO FIELD MEMORY (960-COLUMNx306-ROWx4-BIT)
– TOP VIEW –


GND 38
NC 18
VDD(+5V) 19
NC 21
GND 20

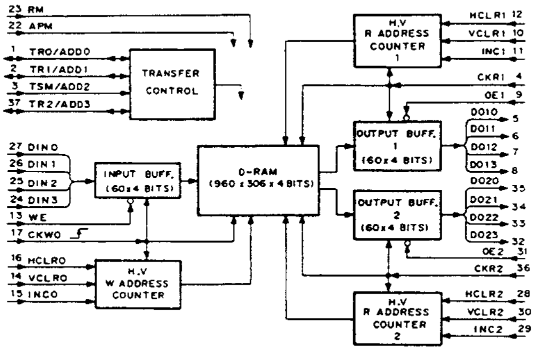

27 DIN0
26 DIN1
25 DIN2
24 DIN3
13 WE
17 CKW0
16 HCLR0
14 VCLR0
15 INC0
1 TR0/ADD0
2 TR1/ADD1
3 TSM/ADD2
37 TR2/ADD3
23 RM
22 APM
DO10 5
DO11 6
DO12 7
DO13 8
OE1 9
CKR1 4
HCLR1 12
VCLR1 10
INC1 11
DO20 35
DO21 34
DO22 33
DO23 32
OE2 31
CKR2 36
HCLR2 28
VCLR2 30
INC2 29

PIN	SIGNAL	DESCRIPTION
1	TR0/ADD0	W PORT 0 TRANSFER SYNC I/O, ADDRESS 0 INPUT
2	TR1/ADD1	R PORT 1 TRANSFER SYNC I/O, ADDRESS 1 INPUT
3	TSM/ADD2	TRANSFER SYNCHRONOUS MODE, ADDRESS 2 INPUT
4	CKR1	R PORT 1 SHIFT SIGNAL INPUT
5	DO10	R PORT 1 DATA 0 OUTPUT
6	DO11	R PORT 1 DATA 1 OUTPUT
7	DO12	R PORT 1 DATA 2 OUTPUT
8	DO13	R PORT 1 DATA 3 OUTPUT
9	OE1	R PORT 1 OUTPUT ENABLE INPUT
10	VCLR1	R PORT 1 VERTICAL CLEAR INPUT
11	INC1	R PORT 1 LINE INCREMENT INPUT
12	HCLR1	R PORT 1 HORIZONTAL CLEAR INPUT
13	WE	W PORT 0 WRITE ENABLE INPUT
14	VCLR0	W PORT 0 VERTICAL CLEAR INPUT
15	INC0	W PORT 0 LINE INCREMENT INPUT
16	HCLR0	W PORT 0 HORIZONTAL CLEAR INPUT
17	CKW0	W PORT 0 SHIFT SIGNAL INPUT
18	NC	(no connection)
19	VDD	+5V INPUT
20	GND	GND
21	NC	(no connection)
22	APM	ADDRESS PRESET MODE INPUT
23	RM	RECURSIVE MODE ENABLE INPUT
24	DIN3	W PORT 0 DATA 3 INPUT
25	DIN2	W PORT 0 DATA 2 INPUT
26	DIN1	W PORT 0 DATA 1 INPUT
27	DIN0	W PORT 0 DATA 0 INPUT
28	HCLR2	R PORT 2 HORIZONTAL CLEAR INPUT
29	INC2	R PORT 2 LINE INCREMENT INPUT
30	VCLR2	R PORT 2 VERTICAL CLEAR INPUT
31	OE2	R PORT 2 OUTPUT ENABLE INPUT
32	DO23	R PORT 2 DATA 3 OUTPUT
33	DO22	R PORT 2 DATA 2 OUTPUT
34	DO21	R PORT 2 DATA 1 OUTPUT
35	DO20	R PORT 2 DATA 0 OUTPUT
36	CKR2	R PORT 2 SHIFT SIGNAL INPUT
37	TR2/ADD3	R PORT 2 TRANSFER SYNC I/O, ADDRESS 3 INPUT
38	GND	GND

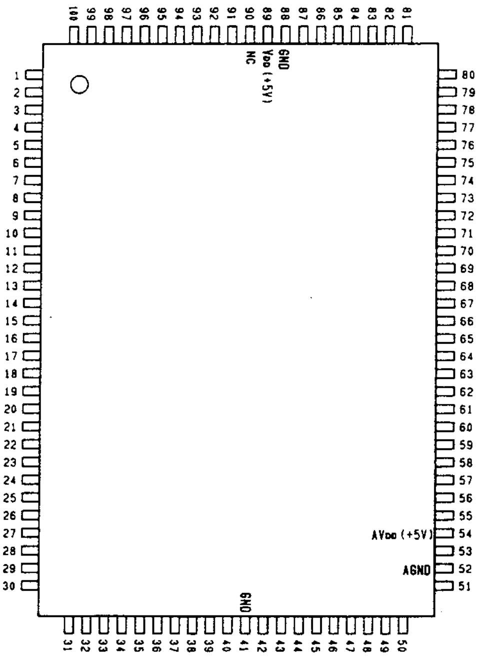
MODE SELECTION

CONTROL INPUTS		TS, TR/ADD			MODE
RM	APM	TSM	TR 0-2	ADD 0-3	
0	0	0	OUT-PUT	-	NON RECURSIVE MODE, TRANSFER SYNCHRONOUS MODE OUTPUT
0	0	1	IN-PUT	-	NON RECURSIVE MODE, TRANSFER SYNCHRONOUS MODE INPUT
0	1	-	-	IN-PUT	NON RECURSIVE MODE, ADDRESS PRESET MODE
1	0	0	OUT-PUT	-	RECURSIVE MODE, TRANSFER SYNCHRONOUS MODE OUTPUT
1	0	1	IN-PUT	-	RECURSIVE MODE, TRANSFER SYNCHRONOUS MODE INPUT

0:LOW LEVEL 1:HIGH LEVEL


23 RM
22 APM
1 TR0/ADD0
2 TR1/ADD1
3 TSM/ADD2
37 TR2/ADD3
TRANSFER CONTROL
27 DIN0
26 DIN1
25 DIN2
24 DIN3
13 WE
17 CKW0
INPUT BUFF. (60x4 BITS)
D-RAM (960 x 306 x 4 BITS)
16 HCLR0
14 VCLR0
15 INC0
H.V W ADDRESS COUNTER
H.V R ADDRESS COUNTER 1
HCLR1 12
VCLR1 10
INC1 11
CKR1 4
OE1 9
OUTPUT BUFF. 1 (60x4 BITS)
DO10 5
DO11 6
DO12 7
DO13 8
OUTPUT BUFF. 2 (60x4 BITS)
DO20 35
DO21 34
DO22 33
DO23 32
OE2 31
CKR2 36
H.V R ADDRESS COUNTER 2
HCLR2 28
VCLR2 30
INC2 29

CXP80624 (SONY) FLAT PACKAGE
CXP80P624 (SONY) FLAT PACKAGE
C-MOS 8-BIT 1-CHIP MICROCOMPUTER
– TOP VIEW –

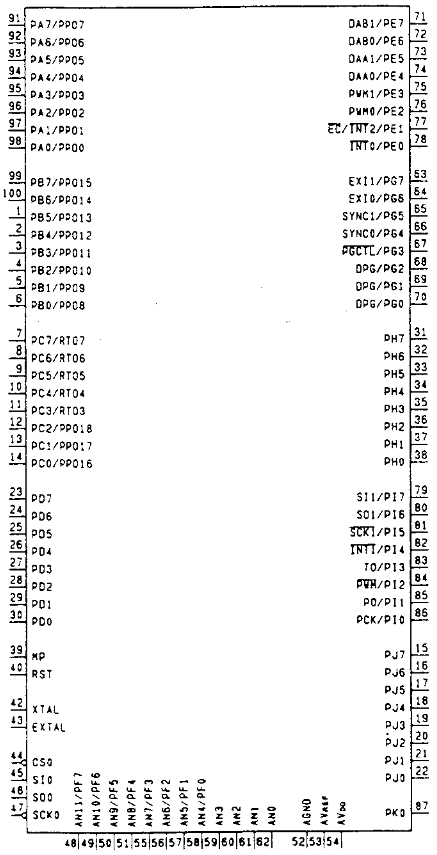

GND
VDD (+5V)
NC
AVDD (+5V)
AGND
GND

INPUT
AN0 – AN11 : A-D CONVERTOR'S ANALOG INPUTS
AVREF : A-D CONVERTOR'S REFERENCE VOLTAGE INPUT
CFG : CAPSTAN FG INPUT
CS0 : SERIAL INTERFACE CHANNLE 0 SELECT INPUT
DPG.DFG : DURM PG AND FG INPUTS
EC : EVENT CONTROL INPUT FOR TIMER/COUNTER
EXI0.EXI1 : FRC CAPTURE UNIT'S EXTERNAL INPUTS
EXTAL : CRYSTAL CONNECTION OR EXTERNAL CLOCK INPUT FOR SYSTEM CLOCK GENERATOR
INT0 – INT2 : INTERRUPT REQUEST INPUTS (FALLING EDGE ACTIVE)
PBCTL : PLAYBACK CTL PULSE INPUT
PCK : PRESCALER'S EXTERNAL CLOCK INPUT
PE0.PE1 : INPUTS OF PORT E (PE2 – PE7 : OUTPUTS)
PF0 – PF3 : INPUTS OF PORT F (PF4 – PF7 : OUTPUTS)
PG0 – PG7 : INPUTS OF PORT G
PI0 : INPUT OF PORT I (PI1 – PI7 : INPUTS/OUTPUTS)
PK0 : INPUT OF PORT K
SI0.SI1 : SERIAL DATA INPUTS (CHANNLE 0 AND CHANNLE 1)
SYNC0.SYNC1 : COMPOSITE SYNC SIGNAL INPUTS

OUTPUT
DAA0.DAB0 : DA GATE PULSE OUTPUTS (12 BITS PWM CHANNLE 0)
DAA1.DAB1 : DA GATE PULSE OUTPUTS (12 BITS PWM CHANNLE 1)
MP : MICROPROCESSOR MODE INPUT
PA0 – PA7 : OUTPUTS OF PORT A
PB0 – PB7 : OUTPUTS OF PORT B
PE2 – PE7 : OUTPUTS OF PORT E (PE0, PE1 : INPUTS)
PF4 – PF7 : OUTPUTS OF PORT F (PF0 – PF3 : INPUTS)
PH0 – PH7 : OUTPUTS OF PORT H (N-CH OPEN DRAIN OUTPUTS)
PPO0 – PPO18 : PROGRAMMABLE PATTERN GENERATOR OUTPUS
PO : PRESCALER OUTPUT
PWM : PULSE WIDTH MODULATION OUTPUT
PWM0.PWM1 : 12 BITS PULSE WIDTH MODULATION OUTPUTS (CHANNLE 0 AND CHANNLE 1)
RTO3 – RTO7 : REALTIME PULSE GENERATOR OUTPUTS
SO0.SO1 : SERIAL DATA OUTPUTS (CHANNLE 0 AND CHANNLE 1)
TO : TIMER/COUNTER OUTPUT (DUTY 50%)
XTAL : CRYSTAL CONNECTION

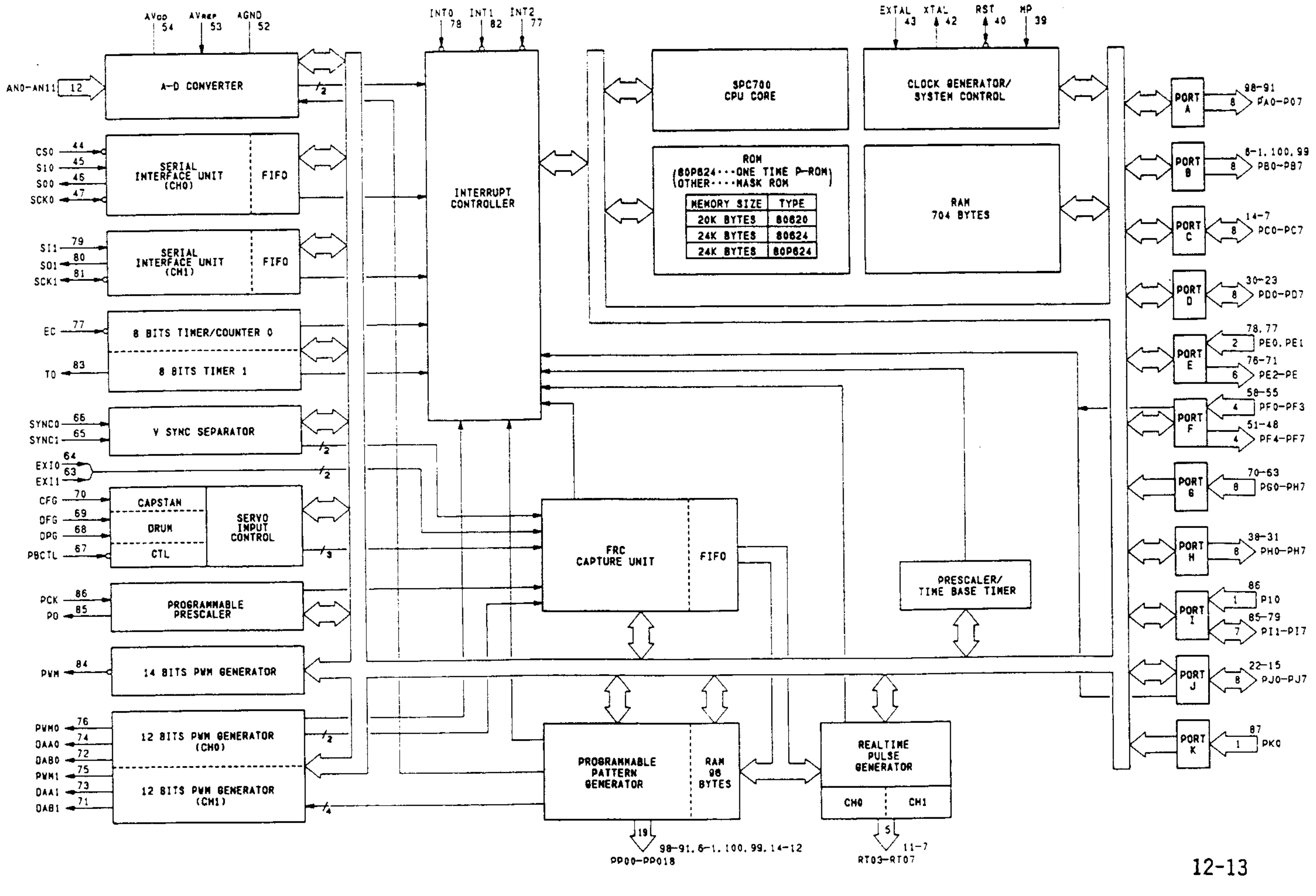
INPUT/OUTPUT
PC0 – PC7 : INPUTS/OUTPUTS OF PROT C (BIT PROGRAMMABLE)
PD0 – PD7 : INPUTS/OUTPUTS OF PROT D (4 BITS PROGRAMMABLE)
PI1 – PI7 : INPUTS/OUTPUTS OF PROT I (BIT PROGRAMMABLE, PI0 : INPUT)
PJ0 – PJ7 : INPUTS/OUTPUTS OF PROT J (BIT PROGRAMMABLE)
RST : SYSTEM RESET INPUT AND POWER ON RESET OUTPUT
SCK0.SCK1 : SERIAL CLOCK INPUTS/OUTPUTS (CHANNLE 0 AND CHANNLE 1)

OTHER
AGND : A-D CONVERTOR'S GROUND
AVDD (+5V) : A-D CONVERTOR'S VDD


91 PA7/PP07
92 PA6/PP06
93 PA5/PP05
94 PA4/PP04
95 PA3/PP03
96 PA2/PP02
97 PA1/PP01
98 PA0/PP00
99 PB7/PP015
100 PB6/PP014
1 PB5/PP013
2 PB4/PP012
3 PB3/PP011
4 PB2/PP010
5 PB1/PP09
6 PB0/PP08
7 PC7/RT07
8 PC6/RT06
9 PC5/RT05
10 PC4/RT04
11 PC3/RT03
12 PC2/PP018
13 PC1/PP017
14 PC0/PP016
23 PD7
24 PD6
25 PD5
26 PD4
27 PD3
28 PD2
29 PD1
30 PD0
39 MP
40 RST
42 XTAL
43 EXTAL
44 CS0
45 SI0
46 S00
47 SCK0
DAB1/PE7 71
DAB0/PE6 72
DAA1/PE5 73
DAA0/PE4 74
PWM1/PE3 75
PWM0/PE2 76
EC/INT2/PE1 77
INT0/PE0 78
EXI1/PG7 63
EXI0/PG6 64
SYNC1/PG5 65
SYNC0/PG4 66
PBCTL/PG3 67
DPG/PG2 68
DPG/PG1 69
DPG/PG0 70
PH7 31
PH6 32
PH5 33
PH4 34
PH3 35
PH2 36
PH1 37
PH0 38
SI1/PI7 79
SO1/PI6 80
SCK1/PI5 81
INT1/PI4 82
TO/PI3 83
PWM/PI2 84
PO/PI1 85
PCK/PI0 86
PJ7 15
PJ6 16
PJ5 17
PJ4 18
PJ3 19
PJ2 20
PJ1 21
PJ0 22
PK0 87
AN11/PF7 48
AN10/PF6 49
AN9/PF5 50
AN8/PF4 51
AN7/PF3 55
AN6/PF2 56
AN5/PF1 57
AN4/PF0 58
AN3 59
AN2 60
AN1 61
AN0 62
AGND 52
AVREF 53
AVDD 54

(VDD = AVDD = + 5V)

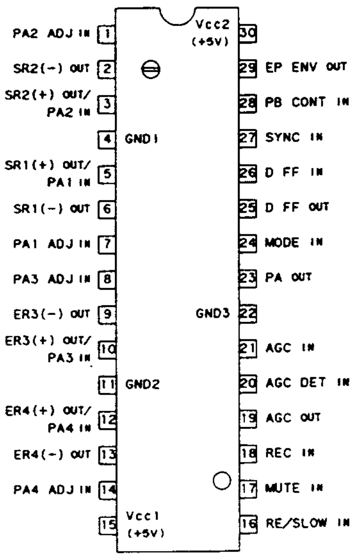
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	O	PB5/PPO13	26	I/O	PD4	51	I/O	PF4/AN8	76	O	PE2/PWM0
2	O	PB4/PPO12	27	I/O	PD3	52	–	AGND	77	I	PE1/EC/INT2
3	O	PB3/PPO11	28	I/O	PD2	53	I	AVREF	78	I	PE0/INT0
4	O	PB2/PPO10	29	I/O	PD1	54	–	AVDD	79	I/O	PI7/SI1
5	O	PB1/PPO9	30	I/O	PD0	55	I	PF3/AN7	80	I/O	PI6/SO1
6	O	PB0/PPO8	31	I/O	PH7	56	I	PF2/AN6	81	I/O	PI5/SCK1
7	I/O	PC7/RTO7	32	O	PH6	57	I	PF1/AN5	82	I/O	PI4/INT1
8	I/O	PC6/RTO6	33	O	PH5	58	I	PF0/AN4	83	I/O	PI3/TO
9	I/O	PC5/RTO5	34	O	PH4	59	I	AN3	84	I/O	PI2/PWM
10	I/O	PC4/RTO4	35	O	PH3	60	I	AN2	85	I/O	PI1/PO
11	I/O	PC3/RTO3	36	O	PH2	61	I	AN1	86	I	PI0/PCK
12	I/O	PC2/PPO18	37	O	PH1	62	I	AN0	87	I	PK0
13	I/O	PC1/PPO17	38	O	PH0	63	I	PG7/EXI1	88	–	GND
14	I/O	PC0/PPO16	39	O	MP	64	I	PG6/EXI0	89	–	VDD
15	I/O	PJ7	40	I/O	RST	65	I	PG5/SYNC1	90	–	NC
16	I/O	PJ6	41	–	GND	66	I	PG4/SYNC0	91	O	PA7/PPO7
17	I/O	PJ5	42	O	XTAL	67	I	PG3/PBCTL	92	O	PA6/PPO6
18	I/O	PJ4	43	I	EXTAL	68	I	PG2/DPG	93	O	PA5/PPO5
19	I/O	PJ3	44	I	CS0	69	I	PG1/DFG	94	O	PA4/PPO4
20	I/O	PJ2	45	I	SI0	70	I	PG0/CFG	95	O	PA3/PPO3
21	I/O	PJ1	46	O	SO0	71	O	PE7/DAB1	96	O	PA2/PPO2
22	I/O	PJ0	47	I/O	SCK0	72	O	PE6/DAB0	97	O	PA1/PPO1
23	I/O	PD7	48	I/O	PF7/AN11	73	O	PE5/DAA1	98	O	PA0/PPO0
24	I/O	PD6	49	I/O	PF6/AN10	74	O	PE4/DAA0	99	O	PB7/PPO15
25	I/O	PD5	50	I/O	PF5/AN9	75	O	PE3/PWM1	100	O	PB6/PPO14

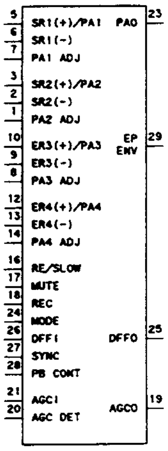

AVDD 54
AVREF 53
AGND 52
AN0–AN11 12
A-D CONVERTER
CS0 44
SI0 45
S00 46
SCK0 47
SERIAL INTERFACE UNIT (CH0)
FIFO
SI1 79
SO1 80
SCK1 81
SERIAL INTERFACE UNIT (CH1)
FIFO
EC 77
8 BITS TIMER/COUNTER 0
TO 83
8 BITS TIMER 1
SYNC0 66
SYNC1 65
V SYNC SEPARATOR
EXI0 64
EXI1 63
CFG 70
DFG 69
DPG 68
PBCTL 67
CAPSTAN
DRUM
CTL
SERVO INPUT CONTROL
PCK 86
PO 85
PROGRAMMABLE PRESCALER
PWM 84
14 BITS PWM GENERATOR
PWM0 76
DAA0 74
DAB0 72
PWM1 75
DAA1 73
DAB1 71
12 BITS PWM GENERATOR (CH0)
12 BITS PWM GENERATOR (CH1)
INT0 78
INT1 82
INT2 77
INTERRUPT CONTROLLER
EXTAL 43
XTAL 42
RST 40
MP 39
SPC700 CPU CORE
CLOCK GENERATOR/ SYSTEM CONTROL
ROM
(80P624···ONE TIME P-ROM)
(OTHER····MASK ROM)
MEMORY SIZE | TYPE
20K BYTES | 80620
24K BYTES | 80624
24K BYTES | 80P624
RAM 704 BYTES
FRC CAPTURE UNIT
FIFO
PRESCALER/ TIME BASE TIMER
PROGRAMMABLE PATTERN GENERATOR
RAM 96 BYTES
REALTIME PULSE GENERATOR
CH0
CH1
19
98–91, 6–1, 100, 99, 14–12
PP00–PP018
5
11–7
RT03–RT07
PORT A
98–91
8
PA0–P07
PORT B
6–1, 100, 99
8
PB0–PB7
PORT C
14–7
8
PC0–PC7
PORT D
30–23
8
PD0–PD7
PORT E
78, 77
2
PE0, PE1
76–71
6
PE2–PE
PORT F
58–55
4
PF0–PF3
51–48
4
PF4–PF7
PORT G
70–63
8
PG0–PH7
PORT H
38–31
8
PH0–PH7
PORT I
86
1
PI0
85–79
7
PI1–PI7
PORT J
22–15
8
PJ0–PJ7
PORT K
87
1
PK0
2
2
2
3
2
4

HA118019NT (HITACHI)

VTR PRE REC AMP

– TOP VIEW –


PA2 ADJ IN 1
SR2(–) OUT 2
SR2(+) OUT/ PA2 IN 3
4 GND1
SR1(+) OUT/ PA1 IN 5
SR1(–) OUT 6
PA1 ADJ IN 7
PA3 ADJ IN 8
ER3(–) OUT 9
ER3(+) OUT/ PA3 IN 10
11 GND2
ER4(+) OUT/ PA4 IN 12
ER4(–) OUT 13
PA4 ADJ IN 14
15 Vcc1 (+5V)
Vcc2 (+5V) 30
29 EP ENV OUT
28 PB CONT IN
27 SYNC IN
26 D FF IN
25 D FF OUT
24 MODE IN
23 PA OUT
GND3 22
21 AGC IN
20 AGC DET IN
19 AGC OUT
18 REC IN
17 MUTE IN
16 RE/SLOW IN


5 SR1(+)/PA1
6 SR1(–)
7 PA1 ADJ
3 SR2(+)/PA2
2 SR2(–)
1 PA2 ADJ
10 ER3(+)/PA3
9 ER3(–)
8 PA3 ADJ
12 ER4(+)/PA4
13 ER4(–)
14 PA4 ADJ
16 RE/SLOW
17 MUTE
18 REC
24 MODE
26 DFFI
27 SYNC
28 PB CONT
21 AGCI
20 AGC DET
PAO 23
EP ENV 29
DFFO 25
AGCO 19

INPUT
AGCI ;AGC
AGC DET ;AGC DETECT
DFFI ;DRUM FF
MODE ;MODE CONTROL (L;SP/H;EP)
MUTE ;REC MUTE CONTROL
PA1–PA4 ;PRE AMP CH1–CH4
PA1–PA4 ADJ ;PRE AMP CH1–CH4 ADJUST
PB CONT ;PB CONTROL (MANUAL/AUTO/STILL)
REC ;REC
RE/SLOW ;REC EQ/SLOW CONTROL
SYNC ;SYNC SEPARATE

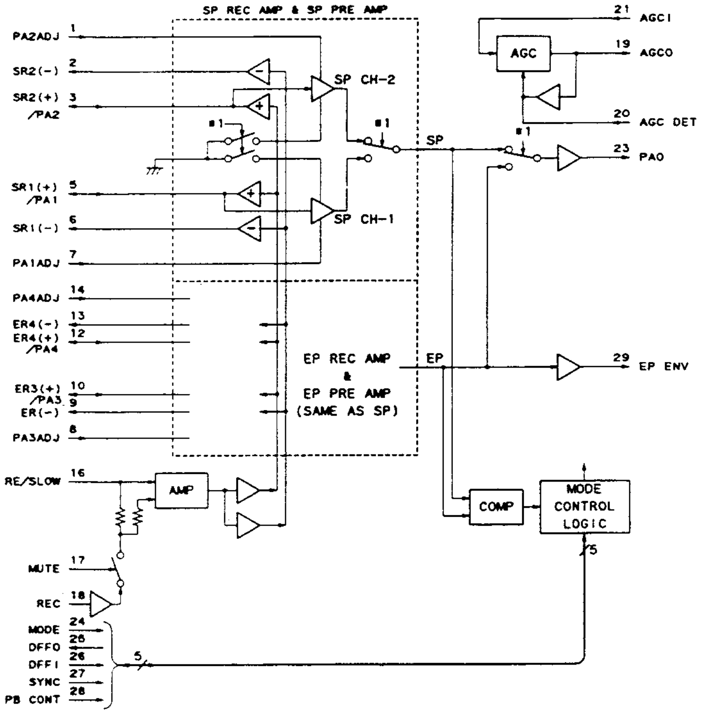
OUTPUT
AGCO ;AGC OUTPUT (PB/REC SELECT)
DFFO ;DRUM FF
EP ENV ;EP ENVELOPE
ER3(+).ER4(+) ;EP REC CH3/CH4(+)
ER3(–).ER4(–) ;EP REC CH3/CH4(–)
PAO ;PRE AMP
SR1(+).SR2(+) ;SP REC CH1/CH2(+)
SR1(–).SR2(–) ;SP REC CH1/CH2(–)

MODE CONTROL

SYMBOL MODE	DFF1	MODE	PB CONT	RE/ SLOW	DFFO	PAO
SP PB	0	0	1	OPEN	0	CH1
	1	0	1	OPEN	1	CH2
EP PB	0	1	1	OPEN	1	CH4
	1	1	1	OPEN	0	CH3
AUTO	0	–	MIDDLE	OPEN		
	1	–	MIDDLE	OPEN		
SP STILL	0	0	0	OPEN	1	CH4
	1	0	0	OPEN	1	CH2
EP STILL	0	1	0	OPEN	0	CH1
	1	1	0	OPEN	0	CH3
SP SLOW	0	0	0	0	0	CH1
	1	0	0	0	1	CH2
EP SLOW	0	1	0	0	1	CH4
	1	1	0	0	0	CH3

0	CH1
1	CH4
1	CH2
0	CH3

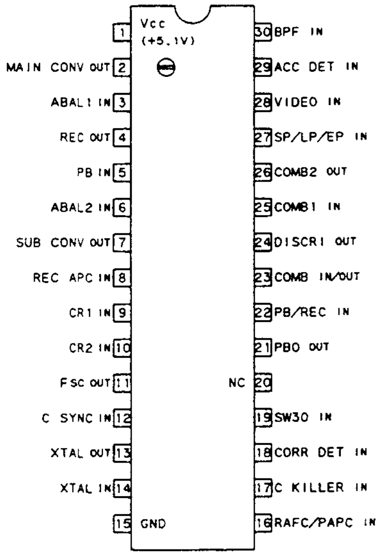
1;HIGH LEVEL
0;LOW LEVEL

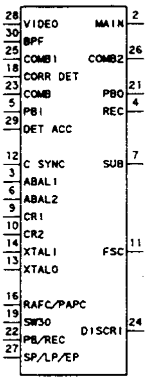

SP REC AMP & SP PRE AMP
PA2ADJ 1
SR2(–) 2
SR2(+) /PA2 3
SR1(+) /PA1 5
SR1(–) 6
PA1ADJ 7
PA4ADJ 14
ER4(–) 13
ER4(+) /PA4 12
ER3(+) /PA3 10
ER(–) 9
PA3ADJ 8
RE/SLOW 16
MUTE 17
REC 18
MODE 24
DFFO 25
DFFI 26
SYNC 27
PB CONT 28
SP CH-2
SP CH-1
*1
SP
EP
EP REC AMP & EP PRE AMP (SAME AS SP)
AMP
AGC
COMP
MODE CONTROL LOGIC
5
21 AGCI
19 AGCO
20 AGC DET
23 PAO
29 EP ENV

HA118027NT (HITACHI)

CHROMA SIGNAL PROCESSOR FOR VHS

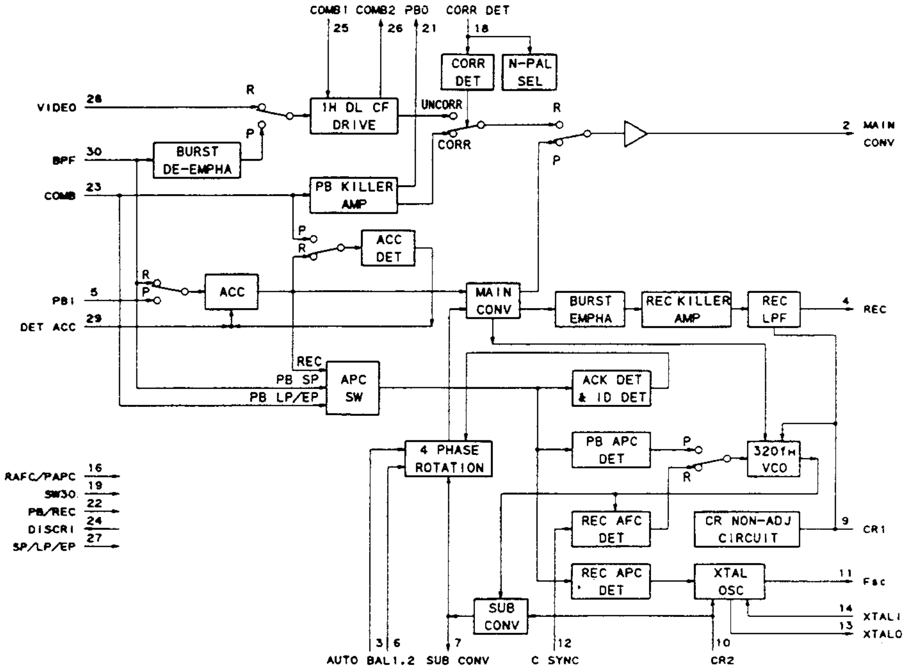
– TOP VIEW –


1 Vcc (+5.1V)
MAIN CONV OUT 2
ABAL1 IN 3
REC OUT 4
PB IN 5
ABAL2 IN 6
SUB CONV OUT 7
REC APC IN 8
CR1 IN 9
CR2 IN 10
Fsc OUT 11
C SYNC IN 12
XTAL OUT 13
XTAL IN 14
15 GND
30 BPF IN
29 ACC DET IN
28 VIDEO IN
27 SP/LP/EP IN
26 COMB2 OUT
25 COMB1 IN
24 DISCRI OUT
23 COMB IN/OUT
22 PB/REC IN
21 PBO OUT
NC 20
19 SW30 IN
18 CORR DET IN
17 C KILLER IN
16 RAFC/PAPC IN


28 VIDEO
30 BPF
25 COMB1
18 CORR DET
23 COMB
5 PB1
29 DET ACC
12 C SYNC
3 ABAL1
6 ABAL2
9 CR1
10 CR2
14 XTALI
13 XTALO
16 RAFC/PAPC
19 SW30
22 PB/REC
27 SP/LP/EP
MAIN 2
COMB2 26
PBO 21
REC 4
SUB 7
FSC 11
DISCRI 24

INPUT
ABAL1 ;DE-COUPLING CAPACITOR PIN for AUTO BALANCE
ABAL2 ;AUTO BALANCE DETECT
ACC DET ;ACC DETECT
BPF ;REC ACC/PB BURST DE-EMPHASIS
CR1 ;CAPACITOR AND RESISTOR NOT-ADJUST DETECT
CR2 ;CRYSTAL OSC
(VARIABLE CAPACITANCE DIORE for 4 PHASE GENERATOR BLOCK)
C KILLER ;COLOR KILLER DETECT
COMB ;PB COLOR KILLER AMP
COMB1 ;COMB DRIVE
CORR DET ;UNCORRELATED SIGNAL/MANUAL UNCORRELATED MODE SELECT
/N·PAL MODE SELECT
CSYNC ;COMPOSITE SYNC
PB1 ;PB ACC
PB/REC ;H;PB/L;REC SELECT
RAFC/PAPC ;REC AFC/PB APC DETECT
REC APC ;REC APC DETECT
SP/LP/EP ;SP/LP/EP SELECT CONTROL (SP:0-0.8V/LP:1.2-3.3V/EP:3.8-5.1V)
SUB CONV ;421MHz TANK CIRCUIT
SW30 ;SWITCHING PULSE (L;CH-2/H;CH-1)
VIDEO ;REC VIDEO
XTAL ;CRYSTAL OSC

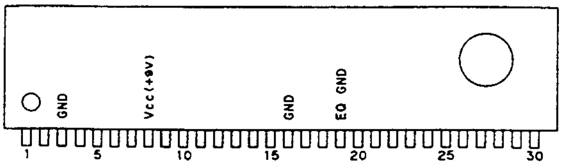
OUTPUT
COMB ;REC COLOR COMB
COMB2 ;PB BURST DE-EMPHASIS
DISCRI ;PB DISCRIMINATE
Fsc ;Fsc
MAIN ;REC COLOR COMB/PB MAIN CONVERTER
PBO ;PB COLOR KILLER AMP/REC COMB
REC ;REC LPF COLOR SIGNAL OUT/PB ID STOP CONTROL
XTAL ;CRYSTAL OSC


COMB1 COMB2 PBO CORR DET
25 26 21 18
CORR DET
N-PAL SEL
VIDEO 28
R
P
1H DL CF DRIVE
UNCORR
CORR
BPF 30
BURST DE-EMPHA
COMB 23
PB KILLER AMP
2 MAIN CONV
ACC DET
PB1 5
DET ACC 29
ACC
MAIN CONV
BURST EMPHA
REC KILLER AMP
REC LPF
4 REC
REC
PB SP
PB LP/EP
APC SW
ACK DET & ID DET
4 PHASE ROTATION
PB APC DET
320fH VCO
REC AFC DET
CR NON-ADJ CIRCUIT
9 CR1
REC APC DET
XTAL OSC
11 Fsc
SUB CONV
14 XTALI
13 XTALO
RAFC/PAPC 16
SW30 19
PB/REC 22
DISCRI 24
SP/LP/EP 27
3 6 AUTO BAL1.2
7 SUB CONV
12 C SYNC
10 CR2

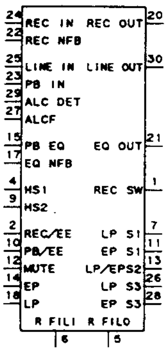
LA7297 (SANYO)

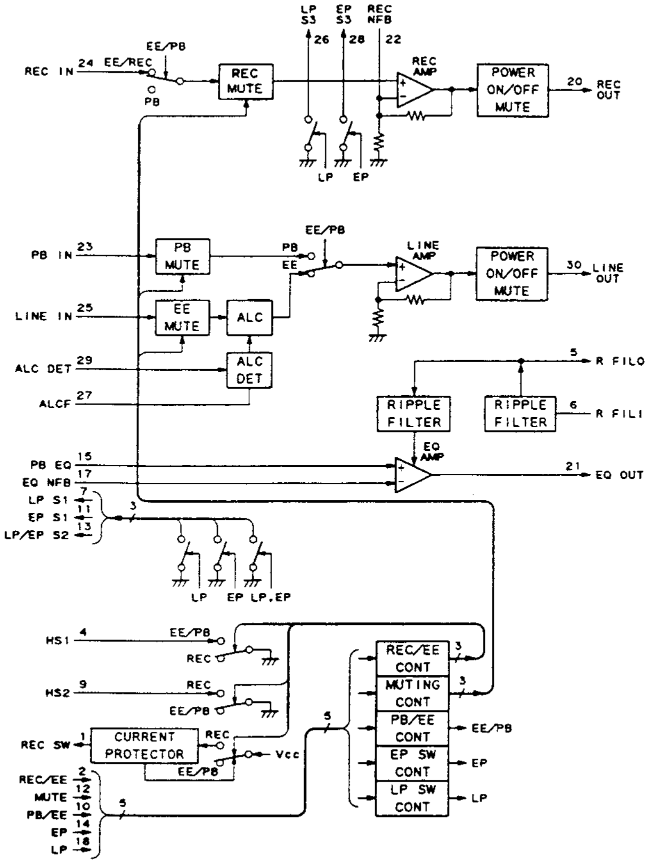
AUDIO SIGNAL REC/PB PROCESSOR

- SIDE VIEW -


GND
Vcc(+9V)
GND
EQ GND
1
5
10
15
20
25
30

PIN NO	I/O	SYMBOL	PIN NO	I/O	SYMBOL
1	O	REC SW	16	—	GND
2	I	REC/EE	17	I	EQ NFB
3	—	GND	18	I	LP
4	I	HS1	19	—	EQ GND
5	O	R FILO	20	O	REC OUT
6	I	R FILI	21	O	EQ OUT
7	O	LP S1	22	I	REC NFB
8	—	Vcc	23	I	PB IN
9	I	HS2	24	I	REC IN
10	I	PB/EE	25	I	LINE IN
11	O	EP S1	26	O	LP S3
12	I	MUTE	27	—	ALCF
13	O	LP/EP S2	28	O	EP S3
14	I	EP	29	I	ALC DET
15	I	PB EQ	30	O	LINE OUT


24 REC IN
22 REC NFB
25 LINE IN
23 PB IN
29 ALC DET
27 ALCF
15 PB EQ
17 EQ NFB
4 HS1
9 HS2
2 REC/EE
10 PB/EE
12 MUTE
14 EP
18 LP
REC OUT 20
LINE OUT 30
EQ OUT 21
REC SW 1
LP S1 7
EP S1 11
LP/EPS2 13
LP S3 26
EP S3 28
R FILI 6
R FILO 5


LP S3
EP S3
REC NFB
26
28
22
EE/PB
REC IN
24
EE/REC
PB
REC MUTE
REC AMP
POWER ON/OFF MUTE
20
REC OUT
LP
EP
PB IN
23
PB MUTE
EE/PB
PB
EE
LINE AMP
POWER ON/OFF MUTE
30
LINE OUT
LINE IN
25
EE MUTE
ALC
ALC DET
29
ALC DET
ALCF
27
5
R FILO
RIPPLE FILTER
RIPPLE FILTER
6
R FILI
EQ AMP
PB EQ
15
EQ NFB
17
21
EQ OUT
LP S1
7
EP S1
11
LP/EP S2
13
3
LP
EP
LP,EP
HS1
4
EE/PB
REC
HS2
9
REC
EE/PB
REC SW
1
CURRENT PROTECTOR
REC
Vcc
EE/PB
REC/EE
2
MUTE
12
PB/EE
10
EP
14
LP
18
5
5
3
3
REC/EE CONT
MUTING CONT
PB/EE CONT
EP SW CONT
LP SW CONT
EE/PB
EP
LP

INPUT

ALC DET ;AUTO LIMITER CONTROL DETECTOR
ALCF ;AUTO LIMITER CONTROL FILTER
EP ;EP SWITCH CONTROL
EQ NFB ;PB EQUALIZED NEGATIVE FEEDBACK
HS1.2 ;HEAD SWITCH 1.2
LP ;LP SWITCH CONTROL
LINE IN ;AUDIO LINE
MUTE ;MUTE SWITCH CONTROL
PB/EE ;PB/EE SWITCH CONTROL
PB EQ ;PB EQUALIZED
PB IN ;AUDIO PB LEVEL
REC/EE ;REC/EE SWITCH CONTROL
REC IN ;AUDIO REC LEVEL
REC NFB ;AUDIO REC NEGATIVE FEEDBACK
R FILI ;RIPPLE FILTER

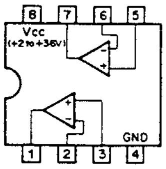
OUTPUT

EP S1-3 ;EP SWITCH
EQ OUT ;PB EQUALIZED
LINE OUT;AUDIO LINE
LP S1-3 ;LP SWITCH
REC OUT ;AUDIO REC LEVEL
REC SW ;REC HEAD VOLTAGE CONTROL SWITCH
R FILO ;RIPPLE FILTER

LM2903DQ (RAYTHEON)
LM2903M (RAYTHEON) FLAT PACKAGE
NJM2903D (JRC)
NJM2903M (JRC) FLAT PACKAGE

DUAL VOLTAGE COMPARATORS

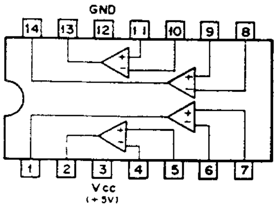
- TOP VIEW -


8
7
6
5
Vcc
(+2to+36V)
GND
1
2
3
4

LM339N (TI)

QUAD COMPARATORS

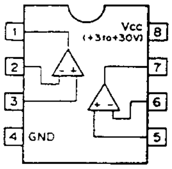
- TOP VIEW -


GND
14
13
12
11
10
9
8
1
2
3
4
5
6
7
Vcc
(+5V)

LM358P (TI)
UPC358C (NEC)

DUAL OPERATIONAL AMPLIFIERS

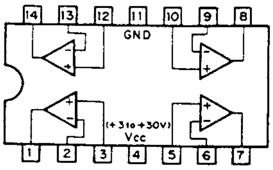
- TOP VIEW -


1
2
3
4
GND
Vcc
(+3to+30V)
8
7
6
5

LM324N (TI)

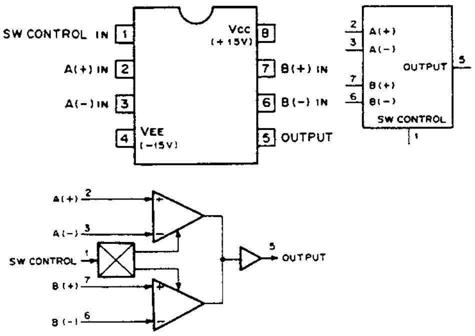
QUAD OPERATIOAL AMPLIFIERS

- TOP VIEW -


14
13
12
11
10
9
8
GND
(+3to+30V)
Vcc
1
2
3
4
5
6
7

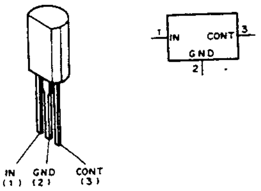
M5201P (MITSUBISHI)

DUAL OPERATIONAL AMPLIFIERS WITH SWITCHED OUTPUT
- TOP VIEW -


SW CONTROL IN 1
A(+) IN 2
A(−) IN 3
4 VEE (−15V)
8 Vcc (+15V)
7 B(+) IN
6 B(−) IN
5 OUTPUT
A(+)
A(−)
OUTPUT
B(+)
B(−)
SW CONTROL

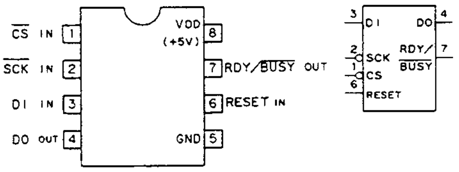
M5237L (MITSUBISHI)

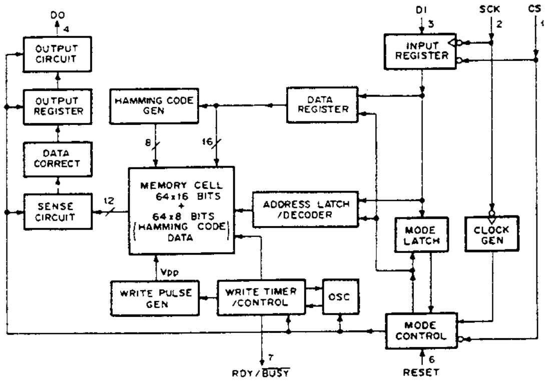
ADJUSTABLE VOLTAGE REGULATOR


IN
CONT
GND
IN (1)
GND (2)
CONT (3)

M6M80011AP (MITSUBISHI)

C-MOS 1k (64x16) BITS ELECTRICALLY ERASABLE PROM
- TOP VIEW -

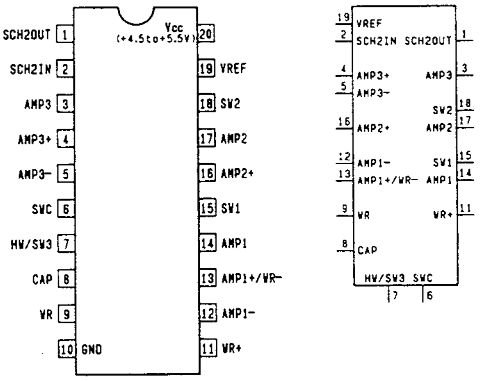

CS IN 1
SCK IN 2
DI IN 3
DO OUT 4
8 VDD (+5V)
7 RDY/BUSY OUT
6 RESET IN
5 GND
DI
DO
SCK
RDY/BUSY
CS
RESET


DO
DI
SCK
CS
OUTPUT CIRCUIT
OUTPUT REGISTER
DATA CORRECT
SENSE CIRCUIT
HAMMING CODE GEN
DATA REGISTER
INPUT REGISTER
MEMORY CELL 64x16 BITS + 64x8 BITS (HAMMING CODE) DATA
ADDRESS LATCH /DECODER
MODE LATCH
CLOCK GEN
WRITE PULSE GEN
WRITE TIMER /CONTROL
OSC
MODE CONTROL
VPP
RDY/BUSY
RESET

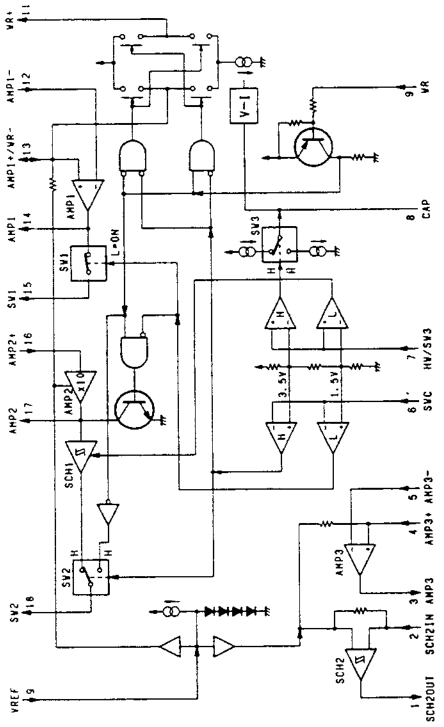
CS : CHIP SELECT INPUT
DI : DATA INPUT
DO : DATA OUTPUT
RDY/BUSY : BUSY OUTPUT
RESET : RESET INPUT
SCK : CLOCK INPUT

M52435P (MITSUBISHI)

VTR DIGITAL SERVO INTERFACE
- TOP VIEW -


SCH2OUT 1
SCH2IN 2
AMP3 3
AMP3+ 4
AMP3− 5
SWC 6
HW/SW3 7
CAP 8
WR 9
10 GND
20 Vcc (+4.5to+5.5V)
19 VREF
18 SW2
17 AMP2
16 AMP2+
15 SW1
14 AMP1
13 AMP1+/WR−
12 AMP1−
11 WR+
M52435P(1/2)

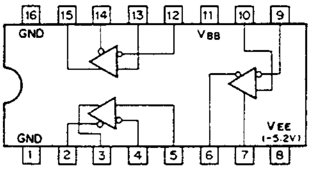
AMP1 : AMP.1 OUTPUT
AMP1+/WR− : AMP.1 NON-INVERTING INPUT/NEGATIVE WRITE OUTPUT
AMP1− : AMP.1 INVERTING INPUT
AMP2 : AMP.2 OUTPUT (x10)
AMP2+ : AMP.2 INPUT
AMP3 : AMP.3 OUTPUT
AMP3+ : AMP.3 NON-INVERTING INPUT
AMP3− : AMP.3 INVERTING INPUT
CAP : CAPASITOR CONNECTING TERMINAL FOR V-I CONVERTER
HW/SW3 : HYSTERESIS VIDTH SELECT INPUT FOR SCHMITT 1
/ TRIGGER INPUT FOR SWITCH 3(TRAPEZOID WAVE GENERATE)
SCH2IN : SCHMITT 2 INPUT
SCH2OUT : SCHMITT 2 OUTPUT
SW1 : SWITCH 1 OUTPUT
SW2 : SWITCH 2 OUTPUT
SWC : SWCTHES 1 AND 2 CONTROL INPUT (REC/PLAYBAK SWICTHOVER)
VREF : REFERANCE VOLTAGE INPUT
WR : WRITE SIGNAL INPUT
WR+ : POSITIVE WRITE OUTPUT


WR+ 11
AMP1− 12
AMP1+/WR− 13
AMP1 14
SW1 15
AMP2+ 16
AMP2 17
SW2 18
VREF 9
V-I
9 WR
8 CAP
AMP1
SW1
L-ON
SW3
H
3.5V
1.5V
7 HW/SW3
6 SVC
AMP2 x10
SCH1
SW2
AMP3
5 AMP3−
4 AMP3+
3 AMP3
2 SCH2IN
SCH2
1 SCH2OUT

MC10H116M (MOTOROLA) FLAT PACKAGE

ECL TRIPLE DIFFERENTIAL OR/NOR LINE RECEIVERS

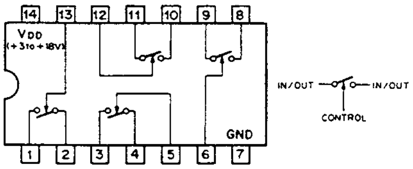
– TOP VIEW –


16
15
14
13
12
11
10
9
GND
VBB
VEE
(-5.2V)
GND
1
2
3
4
5
6
7
8

MC14066BCP (MOTOROLA)

C-MOS QUAD BILATERAL ANALOG SWITCH

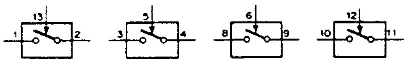
– TOP VIEW –


14
13
12
11
10
9
8
VDD
(+3to+18V)
GND
1
2
3
4
5
6
7
IN/OUT
IN/OUT
CONTROL

CONTROL	SWITCH
0	OFF
1	ON

0; LOW LEVEL

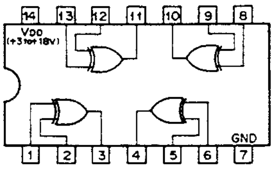
1; HIGH LEVEL


13
1
2
5
3
4
6
8
9
12
10
11

MC14070BCP (MOTOROLA)

C-MOS QUAD EXCLUSIVE OR GATES

– TOP VIEW –


14
13
12
11
10
9
8
VDD
(+3to18V)
GND
1
2
3
4
5
6
7

$Y = \bar{A} \cdot B + A \cdot \bar{B}$

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

0; LOW LEVEL

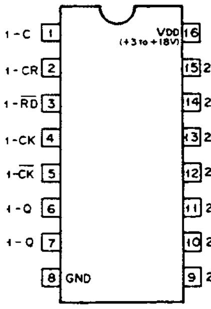
1; HIGH LEVEL

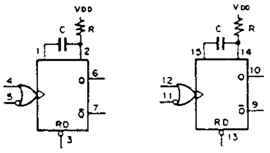
MC14538BCP (MOTOROLA)

MC14538BF (MOTOROLA) FLAT PACKAGE

C-MOS DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATORS

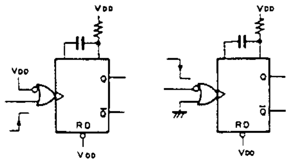
– TOP VIEW –


1-C 1
1-CR 2
1-R̄D 3
1-CK 4
1-C̄K 5
1-Q 6
1-Q̄ 7
8 GND
VDD 16
(+3to+18V)
15 2-C
14 2-CR
13 2-R̄D
12 2-CK
11 2-C̄K
10 2-Q
9 2-Q̄

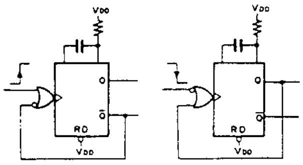

VDD
C
R
1
2
4
5
6
7
Q
Q̄
RD
3
VDD
C
R
15
14
12
11
10
9
Q
Q̄
RD
13

OUTPUT PULSE WIDTH = C·R

RETRIGGERABLE M.M.V


VDD
VDD
Q
Q̄
RD
VDD
VDD
Q
Q̄
RD
VDD

NON-RETRIGGERABLE M.M.V

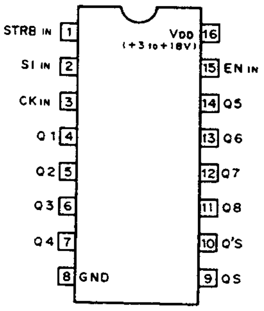

VDD
Q
Q̄
RD
VDD
VDD
Q
Q̄
RD
VDD

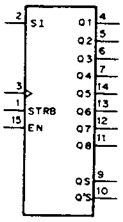
MC14094BCP (MOTOROLA)

TC4094BP (TOSHIBA)

C-MOS 8-STAGE SHIFT-AND-STORE BUS REGISTER

– TOP VIEW –


STRB IN 1
SI IN 2
CK IN 3
Q1 4
Q2 5
Q3 6
Q4 7
8 GND
VDD 16
(+3to+18V)
15 EN IN
14 Q5
13 Q6
12 Q7
11 Q8
10 Q'S
9 QS


2
SI
3
1
STRB
15
EN
Q1 4
Q2 5
Q3 6
Q4 7
Q5 14
Q6 13
Q7 12
Q8 11
QS 9
Q'S 10

SI	: SERIAL DATA INPUT
CK	: CLOCK INPUT
STRB	: STROBE INPUT
EN	: OUTPUT ENABLE INPUT
Q1 – Q8	: PARALLEL DATA OUTPUTS
QS, Q'S	: SERIAL DATA OUTPUTS

INPUTS				PARALLEL OUT		SERIAL OUT	
CK	EN	STRB	SI	Q1	Qn	QS	Q'S
↑	0	X	X	HI-Z	HI-Z	Q7	NC
↓	0	X	X	HI-Z	HI-Z	NC	Q7
↑	1	0	X	NC	NC	Q7	NC
↑	1	1	0	0	Qn-1	Q7	NC
↑	1	1	1	1	Qn-1	Q7	NC
↓	1	1	1	NC	NC	NC	Q7

1; HIGH

0; LOW

X; DON'T CARE

HI-Z; HIGH IMPEDANCE

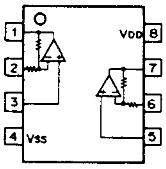
NC ; NO CHANGE

MC14576AF (MOTOROLA) FLAT PACKAGE

MC14576BF (MOTOROLA) FLAT PACKAGE

C-MOS DUAL VIDEO AMPLIFIERS

– TOP VIEW –


1
2
3
4
VSS
VDD 8
7
6
5

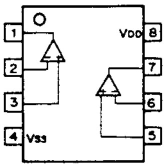
$|V_{DD}| + |V_{SS}| = +5V$ to $+12V$

MC14577AF (MOTOROLA) FLAT PACKAGE

MC14577BF (MOTOROLA) FLAT PACKAGE

C-MOS DUAL VIDEO AMPLIFIERS

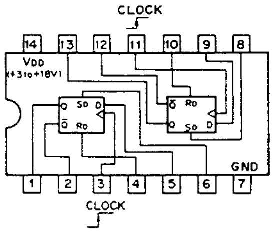
– TOP VIEW –


1
2
3
4
VSS
VDD 8
7
6
5

$|V_{DD}| + |V_{SS}| = +5V$ to $+12V$

HD14013BP (HITACHI)
MC14013BCP (MOTOROLA)

C-MOS DUAL D-TYPE FLIP-FLOPS WITH DIRECT SET/RESET
- TOP VIEW -


CLOCK
14
13
12
11
10
9
8
VDD
(+3to+18V)
SD
RD
Q
D
GND
1
2
3
4
5
6
7
CLOCK

DIRECT R-S FLIP-FLOP

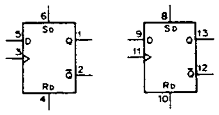
SD	RD	Q	$\bar{Q}$
0	0	Qn	$\bar{Q}$n
0	1	0	1
1	0	1	0
1	1	1	1

D-TYPE FLIP-FLOP

CKn	CKn+1
D	Q
0	0
1	1

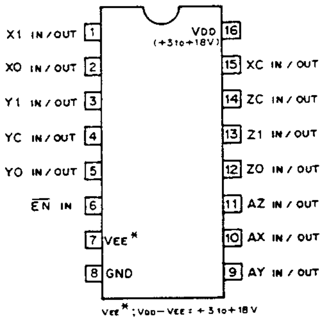
0: LOW LEVEL
1: HIGH LEVEL

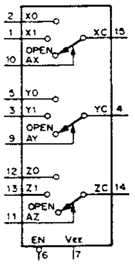
CLOCK CK; ⎍
CKn; BEFORE CLOCK
CKn+1; AFTER CLOCK


6
SD
5
D
3
Q
1
$\bar{Q}$
2
RD
4
8
SD
9
D
11
Q
13
$\bar{Q}$
12
RD
10

HD14053BFP (HITACHI) FLAT PACKAGE
MC14053BCP (MOTOROLA)
MC14053BF (MOTOROLA) FLAT PACKAGE
UPD4053BC (NEC)

C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXERS/DEMULTIPLEXERS
- TOP VIEW -


X1 IN/OUT 1
XO IN/OUT 2
Y1 IN/OUT 3
YC IN/OUT 4
YO IN/OUT 5
EN IN 6
7 VEE*
8 GND
VDD 16
(+3to+18V)
15 XC IN/OUT
14 ZC IN/OUT
13 Z1 IN/OUT
12 ZO IN/OUT
11 AZ IN/OUT
10 AX IN/OUT
9 AY IN/OUT
VEE* ; VDD−VEE = +3 to+18 V

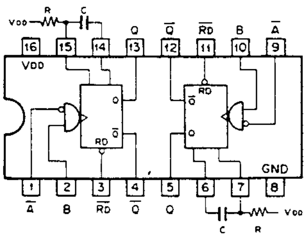

2 XO
1 X1
OPEN
10 AX
XC 15
5 YO
3 Y1
OPEN
9 AY
YC 4
12 ZO
13 Z1
OPEN
11 AZ
ZC 14
EN
VEE
6
7

CONT. INPUTS		ON CHANNEL
EN	A (X,Y,Z,)	
0	0	0
0	1	1
1	X	OPEN

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE.

MC74HC123AF (MOTOROLA) FLAT PACKAGE
TC74HC123AF (TOSHIBA) FLAT PACKAGE

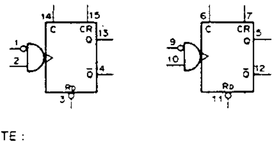
C-MOS DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATORS
- TOP VIEW -


R
C
VDD
Q
$\bar{Q}$
$\overline{RD}$
B
$\bar{A}$
16
15
14
13
12
11
10
9
VDD
RD
Q
$\bar{Q}$
RD
GND
1
2
3
4
5
6
7
8
$\bar{A}$
B
$\overline{RD}$
$\bar{Q}$
Q
C
R
VDD

INPUT			OUTPUT	
RD	A	B	Q	$\bar{Q}$
0	X	X	0	1
1	1	X	0	1
1	X	0	0	1
1	0	⎍	⎍	⎍
1	⎍	1	⎍	⎍
⎍	0	1	⎍	⎍

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

OUTPUT PULSE WIDTH = 0.46CR

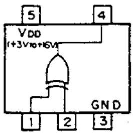

14
15
C
CR
Q
$\bar{Q}$
RD
1
2
13
4
3
6
7
C
CR
Q
$\bar{Q}$
RD
9
10
5
12
11

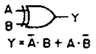
NOTE :

TYPE	VDD
TC74HCT123AF	+5V
OTHER TYPES	+2 to +6V

TC4S30F (TOSHIBA) FLAT PACKAGE

C-MOS EXCLUSIVE OR GATE
- TOP VIEW -


5
4
VDD
(+3V to+6V)
GND
1
2
3

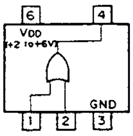

A
B
Y
Y = $\bar{A}$·B + A·$\bar{B}$

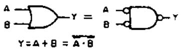
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

0; LOW LEVEL
1; HIGH LEVEL

SC7S32F (MOTOROLA) FLAT PACKAGE
TC7S32F (TOSHIBA) FLAT PACKAGE

C-MOS 2-INPUT OR GATE
- TOP VIEW -


6
4
VDD
(+2 to+6V)
GND
1
2
3

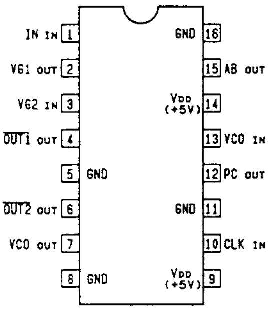

A
B
Y =
A
B
Y
Y = A + B = $\overline{\bar{A} \cdot \bar{B}}$

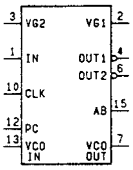
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

0 ; LOW LEVEL
1 ; HIGH LEVEL

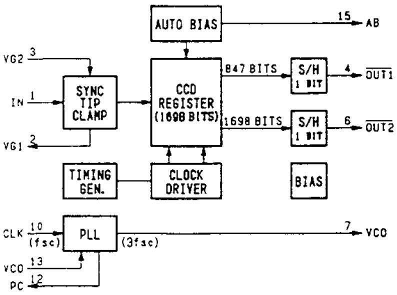
CXL1506M (SONY) FLAT PACKAGE

C-MOS CCD 1H/2H DELAY LINE FOR PAL VIDEO SYSTEM
- TOP VIEW -


IN IN 1
VG1 OUT 2
VG2 IN 3
$\overline{OUT1}$ OUT 4
5 GND
$\overline{OUT2}$ OUT 6
VCO OUT 7
8 GND
GND 16
15 AB OUT
VDD (+5V) 14
13 VCO IN
12 PC OUT
GND 11
10 CLK IN
VDD (+5V) 9


3 VG2
VG1 2
1 IN
OUT1 4
OUT2 6
10 CLK
AB 15
12 PC
13 VCO IN
VCO OUT 7

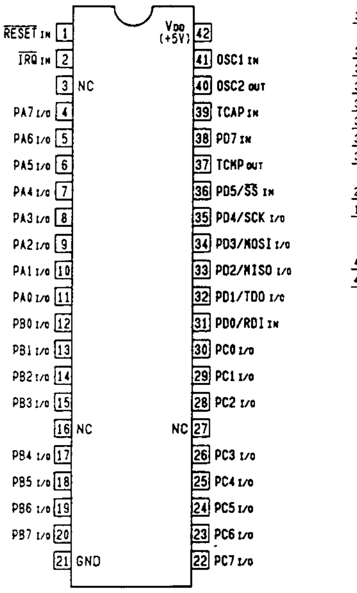
AB	: AUTO BIAS DC OUTPUT
CLK	: fsc CLOCK INPUT (4.433619 MHz)
IN	: POSITIVE SIGNAL INPUT
OUT1	: 1H DELAY SIGNAL OUTPUT (NEGATIVE)
OUT2	: 2H DELAY SIGNAL OUTPUT (NEGATIVE)
PC	: PHASE COMPARATER OUTPUT
VCO	: 3 · fsc CLOCK OUTPUT (PIN 7)
VCO	: VCO INPUT (PIN 13)
VG1	: GATE BIAS 1 DC OUTPUT
VG2	: GATE BIAS 2 DC INPUT

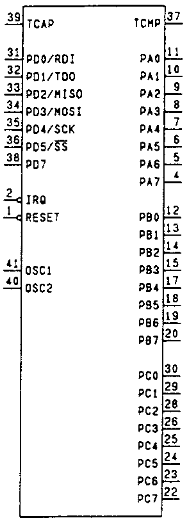

AUTO BIAS
15
AB
VG2 3
IN 1
VG1 2
SYNC TIP CLAMP
CCD REGISTER (1698 BITS)
847 BITS
1698 BITS
S/H 1 BIT
4
$\overline{OUT1}$
S/H 1 BIT
6
$\overline{OUT2}$
TIMING GEN.
CLOCK DRIVER
BIAS
CLK 10 (fsc)
PLL
(3fsc)
7
VCO
VCO 13
PC 12

MC68HC05C4 (MOTOROLA)

C-MOS 8-BIT MICROCONTROLLER UNIT

– TOP VIEW –


RESET IN 1
IRQ IN 2
3 NC
PA7 I/O 4
PA6 I/O 5
PA5 I/O 6
PA4 I/O 7
PA3 I/O 8
PA2 I/O 9
PA1 I/O 10
PA0 I/O 11
PB0 I/O 12
PB1 I/O 13
PB2 I/O 14
PB3 I/O 15
16 NC
PB4 I/O 17
PB5 I/O 18
PB6 I/O 19
PB7 I/O 20
21 GND
VDD (+5V) 42
41 OSC1 IN
40 OSC2 OUT
39 TCAP IN
38 PD7 IN
37 TCMP OUT
36 PD5/SS IN
35 PD4/SCK I/O
34 PD3/MOSI I/O
33 PD2/MISO I/O
32 PD1/TDO I/O
31 PD0/RDI IN
30 PC0 I/O
29 PC1 I/O
28 PC2 I/O
NC 27
26 PC3 I/O
25 PC4 I/O
24 PC5 I/O
23 PC6 I/O
22 PC7 I/O


39 TCAP
TCMP 37
31 PD0/RDI
32 PD1/TDO
33 PD2/MISO
34 PD3/MOSI
35 PD4/SCK
36 PD5/SS
38 PD7
2 IRQ
1 RESET
41 OSC1
40 OSC2
PA0 11
PA1 10
PA2 9
PA3 8
PA4 7
PA5 6
PA6 5
PA7 4
PB0 12
PB1 13
PB2 14
PB3 15
PB4 17
PB5 18
PB6 19
PB7 20
PC0 30
PC1 29
PC2 28
PC3 26
PC4 25
PC5 24
PC6 23
PC7 22

INPUT

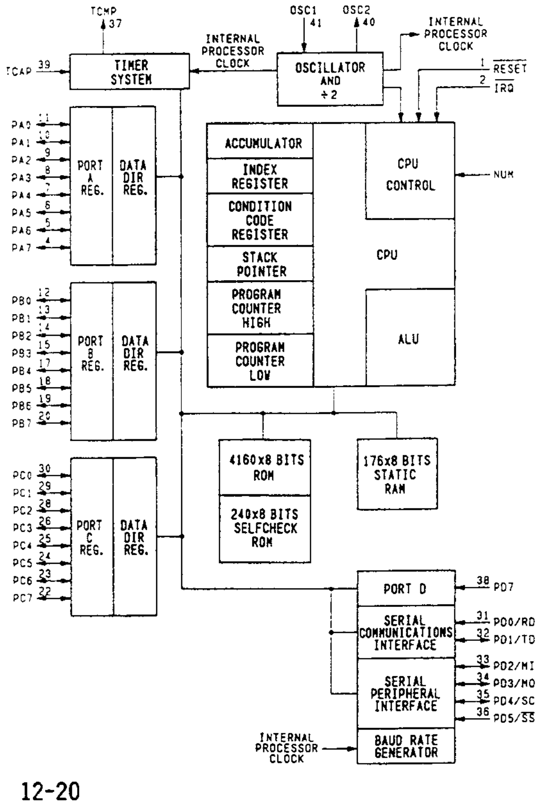
IRQ	; INTERRUPT REQUEST
OSC1	; OSCILLATOR FREQUENCY
PD0 – PD5, PD7	; PROGRAMMABLE D PORT
RDI	; RECEIVING DATA
RESET	; RESET
SS	; SUB SELECT
TCAP	; CAPTURE FEATURE FOR THE ON-CHIP PROGRAMMABLE TIMER

OUTPUT

OSC2	; OSCILLATOR FREQUENCY
SCK	; SERIAL CLOCK
TCMP	; COMPARE FEATURE OF THE ON-CHIP TIMER
TDO	; TRANSMITION DATA

INPUT/OUTPUT

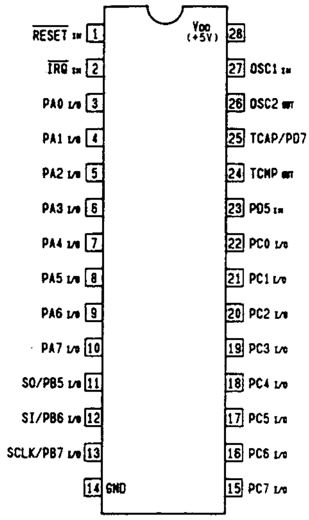
MISO	; MASTER INPUT, SUB OUTPUT
MOSI	; MASTER OUTPUT, SUB INPUT
PA0 – PA7	; PROGRAMMABLE A PORT
PB0 – PB7	; PROGRAMMABLE B PORT
PC0 – PC7	; PROGRAMMABLE C PORT

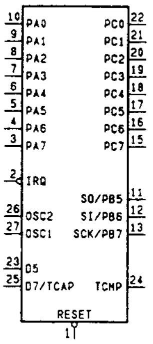

TCMP 37
OSC1 41
OSC2 40
INTERNAL PROCESSOR CLOCK
TCAP 39
TIMER SYSTEM
OSCILLATOR AND ÷2
1 RESET
2 IRQ
PORT A REG.
DATA DIR REG.
ACCUMULATOR
INDEX REGISTER
CONDITION CODE REGISTER
STACK POINTER
PROGRAM COUNTER HIGH
PROGRAM COUNTER LOW
CPU CONTROL
CPU
ALU
NUM
PORT B REG.
PORT C REG.
4160x8 BITS ROM
240x8 BITS SELFCHECK ROM
176x8 BITS STATIC RAM
PORT D
38 PD7
SERIAL COMMUNICATIONS INTERFACE
31 PD0/RDI
32 PD1/TDO
SERIAL PERIPHERAL INTERFACE
33 PD2/MISO
34 PD3/MOSI
35 PD4/SCK
36 PD5/SS
BAUD RATE GENERATOR
INTERNAL PROCESSOR CLOCK

MC68HC05P7BSC402047B (MOTOROLA)

C-MOS 8-BIT 1-CHIP MICROCONTROLLER UNIT

– TOP VIEW –


RESET IN 1
IRQ IN 2
PA0 I/O 3
PA1 I/O 4
PA2 I/O 5
PA3 I/O 6
PA4 I/O 7
PA5 I/O 8
PA6 I/O 9
PA7 I/O 10
SO/PB5 I/O 11
SI/PB6 I/O 12
SCLK/PB7 I/O 13
14 GND
VDD (+5V) 28
27 OSC1 IN
26 OSC2 OUT
25 TCAP/PD7 IN
24 TCMP OUT
23 PD5 IN
22 PC0 I/O
21 PC1 I/O
20 PC2 I/O
19 PC3 I/O
18 PC4 I/O
17 PC5 I/O
16 PC6 I/O
15 PC7 I/O


10 PA0
9 PA1
8 PA2
7 PA3
6 PA4
5 PA5
4 PA6
3 PA7
PC0 22
PC1 21
PC2 20
PC3 19
PC4 18
PC5 17
PC6 16
PC7 15
2 IRQ
SO/PB5 11
SI/PB6 12
SCK/PB7 13
26 OSC2
27 OSC1
23 D5
25 D7/TCAP
TCMP 24
RESET 1

INPUT

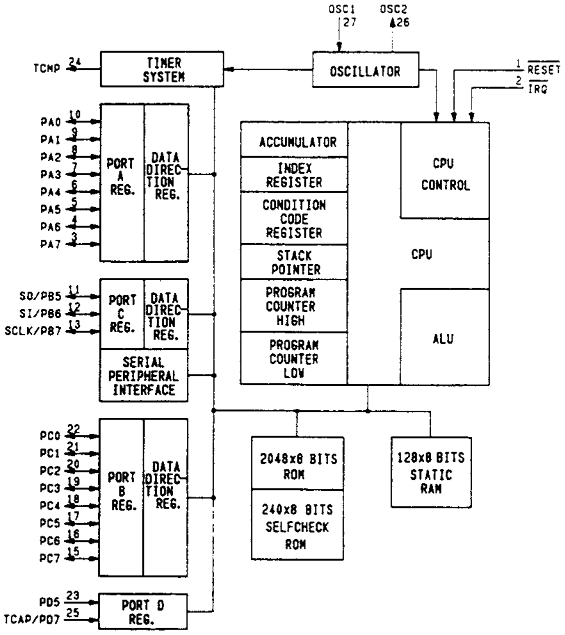
IRQ	; INTERRUPT REQUEST INPUT
OSC1	; EXTERNAL CLOCK INPUT OR CRYSTAL CONNECTION
PD3, PD5	; D PORT INPUT
RESET	; RESET INPUT
SI	; SERIAL DATA INPUT
TCAP	; CAPTURE FEATURE INPUT FOR TIMER SYSTEM

OUTPUT

OSC2	; CRYSTAL CONNECTION
SO	; SERIAL DATA OUTPUT
TCMP	; COMPARE FEATURE OUTPUT OF TIMER SYSTEM

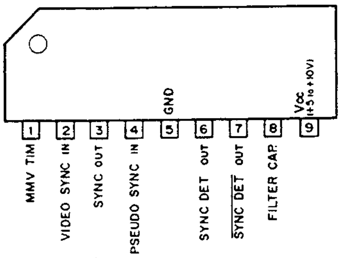
INPUT/OUTPUT

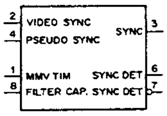
PA0–PA7	; PROGRAMMABLE A PORT
PB5–PB7	; PROGRAMMABLE B PORT
PC0–PC7	; PROGRAMMABLE C PORT
SCLK	; SERIAL INTERFACE'S CLOCK INPUT/OUTPUT

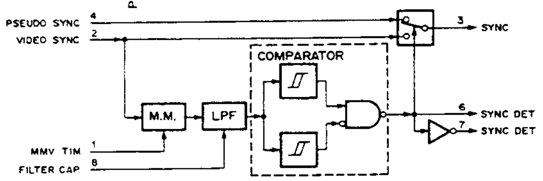

OSC1 27
OSC2 26
TCMP 24
TIMER SYSTEM
OSCILLATOR
1 RESET
2 IRQ
PA0 10
PA1 9
PA2 8
PA3 7
PA4 6
PA5 5
PA6 4
PA7 3
PORT A REG.
DATA DIRECTION REG.
ACCUMULATOR
INDEX REGISTER
CONDITION CODE REGISTER
STACK POINTER
PROGRAM COUNTER HIGH
PROGRAM COUNTER LOW
CPU CONTROL
CPU
ALU
SO/PB5 11
SI/PB6 12
SCLK/PB7 13
PORT C REG.
SERIAL PERIPHERAL INTERFACE
PC0 22
PC1 21
PC2 20
PC3 19
PC4 18
PC5 17
PC6 16
PC7 15
PORT B REG.
2048x8 BITS ROM
240x8 BITS SELFCHECK ROM
128x8 BITS STATIC RAM
PD5 23
TCAP/PD7 25
PORT D REG.

NJM2220S (JRC)

VIDEO SYNC DETECTOR
– SIDE VIEW –

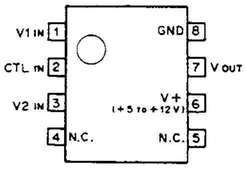

GND
Vcc (+5 to +10V)
1
2
3
4
5
6
7
8
9
MMV TIM
VIDEO SYNC IN
SYNC OUT
PSEUDO SYNC IN
SYNC DET OUT
SYNC DET OUT
FILTER CAP.

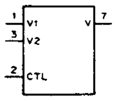

2 VIDEO SYNC
4 PSEUDO SYNC
SYNC 3
1 MMV TIM
SYNC DET 6
8 FILTER CAP.
SYNC DET 7

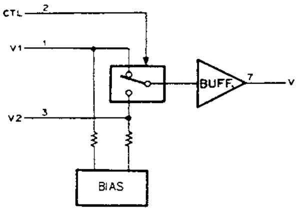

PSEUDO SYNC 4
VIDEO SYNC 2
3 SYNC
COMPARATOR
M.M.
LPF
6 SYNC DET
7 SYNC DET
MMV TIM 1
FILTER CAP 8

NJM2233BM (JRC) FLAT PACKAGE

2-INPUT VIDEO SIGNAL SWITCH
– TOP VIEW –


V1 IN 1
CTL IN 2
V2 IN 3
4 N.C.
GND 8
7 V OUT
V+ (+5 to +12V) 6
N.C. 5


1 V1
3 V2
2 CTL
V 7

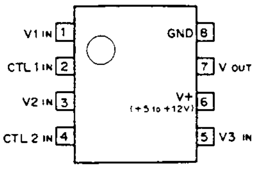

CTL 2
V1 1
V2 3
BUFF.
7 V
BIAS

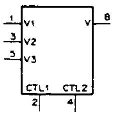
CTL	V
0	V1
1	V2

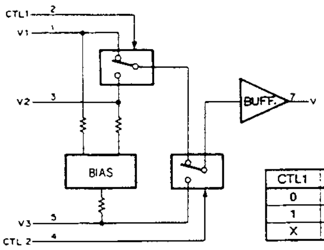
0 : LOW LEVEL
1 : HIGH LEVEL

NJM2234M (JRC) FLAT PACKAGE

3-INPUT VIDEO SIGNAL SWITCH
– TOP VIEW –


V1 IN 1
CTL 1 IN 2
V2 IN 3
CTL 2 IN 4
GND 8
7 V OUT
V+ (+5 to +12V) 6
5 V3 IN


1 V1
3 V2
5 V3
V 8
CTL1 2
CTL2 4

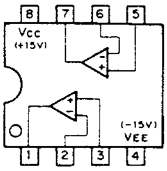

CTL1 2
V1 1
V2 3
BUFF.
7 V
BIAS
V3 5
CTL 2 4

CTL1	CTL2	V
0	0	V1
1	0	V2
X	1	V3

0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE

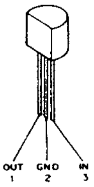
NJM4560D (JRC)
NJM4560MD (JRC) FLAT PACKAGE
NJM5532D-D (JRC)
NJM5532M (JRC) FLAT PACKAGE
RC4560D (RAYTHEON)
RC5532DD (RAYTHEON)
RC5532M (RAYTHEON) FLAT PACKAGE

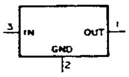
DUAL OPERATIONAL AMPLIFIER
– TOP VIEW –


8
7
6
5
Vcc (+15V)
(–15V) VEE
1
2
3
4

NJM78L05A (JRC) +5V (100mA)
NJM78L09A (JRC) +9V (100mA)
RC78L05A (RAYTHEON) +5V (100mA)
RC78L09A (RAYTHEON) +9V (100mA)

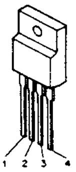
POSITIVE VOLTAGE REGULATOR

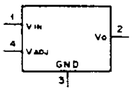

OUT 1
GND 2
IN 3


3 IN
OUT 1
GND 2

PQ05RF2V (SHARP) +5V

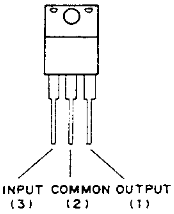
POSITIVE VOLTAGE REGULATOR (2A)

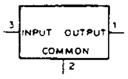



1 VIN
4 VADJ
Vo 2
GND 3

NJM7809FA (JRC) +9V
RC7809FA (RAYTHEON) +9V

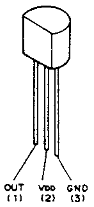
POSITIVE VOLTAGE REGULATOR
– FRONT VIEW –

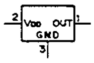

INPUT (3)
COMMON (2)
OUTPUT (1)


3 INPUT
OUTPUT 1
COMMON 2

S-8054HNM (SEIKO I AND E) 4.50V – 4.70V

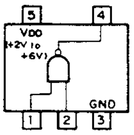
C-MOS VOLTAGE DETECTOR

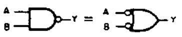

OUT
(1)
VDD
(2)
GND
(3)


2
VDD
OUT
1
GND
3

SC7S00F (MOTOROLA) FLAT PACKAGE
TC7S00F (TOSHIBA) FLAT PACKAGE

C-MOS 2-INPUT NAND GATE
– TOP VIEW –


5
4
VDD
(+2V to +6V)
GND
1
2
3



$Y = \overline{A \cdot B} = \overline{A} + \overline{B}$

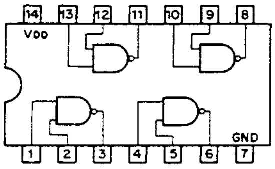
A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

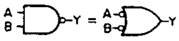
0 ; LOW LEVEL
1 ; HIGH LEVEL

SN74HC00ANS (TI) FLAT PACKAGE

C-MOS QUAD 2-INPUT NAND GATES
– TOP VIEW –

TC74HC00P


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



$Y = \overline{A \cdot B} = \overline{A} + \overline{B}$

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

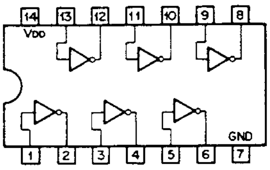
0 ; LOW LEVEL
1 ; HIGH LEVEL

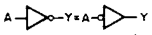
NOTE :

TYPE	VDD
TC74AC00 TYPE	+2 to +5.5V
MC74HCT00N	+5V
74ACT00 TYPE	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC04ANS (TI) FLAT PACKAGE

C-MOS HEX INVERTERS
– TOP VIEW –


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



$Y = \overline{A}$

A	Y
0	1
1	0

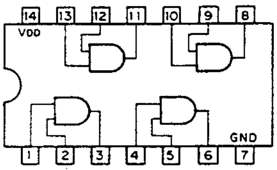
0 : LOW LEVEL
1 : HIGH LEVEL

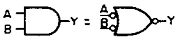
NOTE :

TYPE	VDD
74HCT04 TYPE	+5V
TC74AC04 TYPE	+2 to +5.5V
74ACT04 TYPE	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC08ANS (TI) FLAT PACKAGE

C-MOS QUAD 2-INPUT AND GATES
– TOP VIEW –


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



$Y = A \cdot B = \overline{\overline{A} + \overline{B}}$

A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

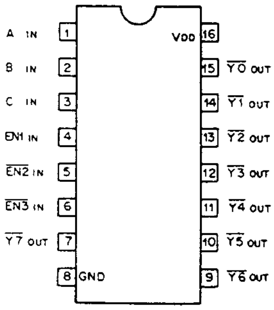
0 ; LOW LEVEL
1 ; HIGH LEVEL

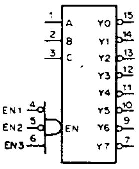
NOTE :

TYPE	VDD
TC74AC08F	+2 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC138AN (TI)

C-MOS 3-TO-8 LINE DECODER/DEMULTIPLEXER
– TOP VIEW –


A IN
1
B IN
2
C IN
3
EN1 IN
4
EN2 IN
5
EN3 IN
6
Y7 OUT
7
8
GND
VDD
16
15
Y0 OUT
14
Y1 OUT
13
Y2 OUT
12
Y3 OUT
11
Y4 OUT
10
Y5 OUT
9
Y6 OUT


1
A
2
B
3
C
EN1
4
EN2
5
EN3
6
EN
Y0
15
Y1
14
Y2
13
Y3
12
Y4
11
Y5
10
Y6
9
Y7
7

INPUTS				OUTPUTS							
EN	C	B	A	Y7	Y6	Y5	Y4	Y3	Y2	Y1	Y0
0	X	X	X	1	1	1	1	1	1	1	1
1	0	0	0	1	1	1	1	1	1	1	0
1	0	0	1	1	1	1	1	1	1	0	1
1	0	1	0	1	1	1	1	1	0	1	1
1	0	1	1	1	1	1	1	0	1	1	1
1	1	0	0	1	1	1	0	1	1	1	1
1	1	0	1	1	1	0	1	1	1	1	1
1	1	1	0	1	0	1	1	1	1	1	1
1	1	1	1	0	1	1	1	1	1	1	1

$EN = \overline{EN1} \cdot \overline{EN2} \cdot EN3$

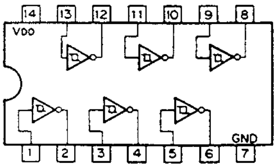
0 : LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

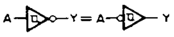
NOTE

TYPE	VDD
74HCT138 TYPE	+5V
74ACT138 TYPE	+4.5 to +5.5V
TC74AC138 TYPE	+2 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC14AN (TI)

C-MOS HEX SCHMITT TRIGGER INVERTERS
– TOP VIEW –

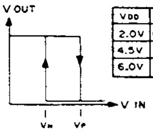

14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



$Y = \overline{A}$

A	Y
0	1
1	0

0 ;LOW LEVEL
1 ;HIGH LEVEL



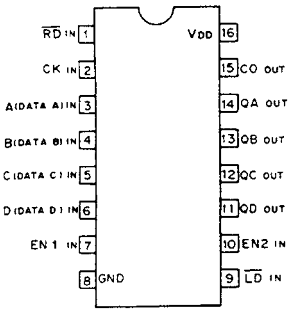
VDD	V_N	V_P
2.0V	0.75V	1.25V
4.5V	1.9V	2.7V
6.0V	2.6V	3.6V

NOTE :

TYPE	VDD
TC74AC14 TYPE	+2 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC163ANS (TI) FLAT PACKAGE

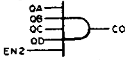
C-MOS PRESETTABLE SYNCHRONOUS 4-BIT BINARY COUNTER
- TOP VIEW -


RD IN 1
CK IN 2
A (DATA A) IN 3
B (DATA B) IN 4
C (DATA C) IN 5
D (DATA D) IN 6
EN 1 IN 7
8 GND
VDD 16
15 CO OUT
14 QA OUT
13 QB OUT
12 QC OUT
11 QD OUT
10 EN2 IN
9 LD IN

MODE SELECTION

CONTROL INPUTS				MODE
RD	LD	EN1	EN2	
0	X	X	X	RESET (SYNCHRONOUS)
1	0	X	X	PRESET (SYNCHRONOUS)
1	1	0	X	NO COUNT
1	1	X	0	NO COUNT
1	1	1	1	COUNT

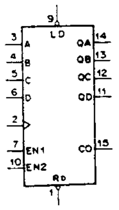
CARRY OUTPUT "CO"


QA
QB
QC
QD
EN2
CO

CO IS HIGH WHEN EN2 INPUT IS HIGH AND COUNT IS "15".

NOTE :

TYPE	VDD
74ACT163 TYPE	+ 4.5 to + 5.5V
TC74AC163 TYPE	+ 2 to + 5.5V
OTHER TYPES	+ 2 to + 6V

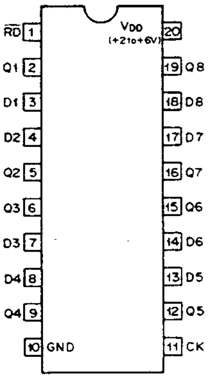

9 LD
3 A
4 B
5 C
6 D
2
7 EN1
10 EN2
RD 1
QA 14
QB 13
QC 12
QD 11
CO 15

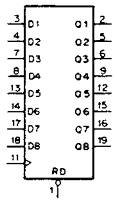
COUNT SEQUENCE

COUNT	OUTPUTS			
	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

SN74HC273ANS (TI) FLAT PACKAGE

C-MOS OCTAL D-TYPE FLIP-FLOPS WITH RESET
- TOP VIEW -

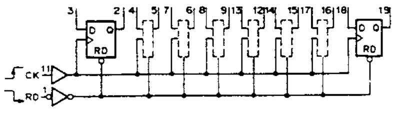

RD 1
Q1 2
D1 3
D2 4
Q2 5
Q3 6
D3 7
D4 8
Q4 9
10 GND
VDD (+2 to +6V) 20
19 Q8
18 D8
17 D7
16 Q7
15 Q6
14 D6
13 D5
12 Q5
11 CK


D1 Q1
D2 Q2
D3 Q3
D4 Q4
D5 Q5
D6 Q6
D7 Q7
D8 Q8
RD

EACH FLIP-FLOP

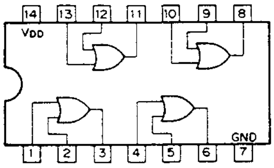
INPUT			OUT
RD	CK	D	Q
0	X	X	0
1	⌠	0	0
1	⌠	1	1
1	0	X	Qo

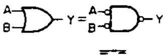
0 ;LOW LEVEL
1 ;HIGH LEVEL
X ;DON'T CARE


3
2
4
5
7
6
8
9
13
12
14
15
17
16
18
19
D
Q
RD
CK
RD

SN74HC32ANS (TI) FLAT PACKAGE

C-MOS QUAD 2-INPUT OR GATES
- TOP VIEW -


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



$Y = A + B = \overline{\bar{A} \cdot \bar{B}}$

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

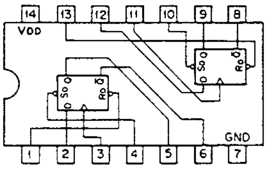
0:LOW LEVEL
1:HIGH LEVEL

NOTE :

TYPE	VDD
TC74AC32 TYPE	+2 to +5.5V
OTHER TYPES	+2 to +6V

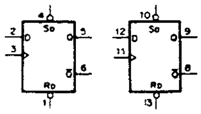
SN74HC74ANS (TI) FLAT PACKAGE

C-MOS DUAL D-TYPE FLIP-FLOPS WITH DIRECT SET/RESET
- TOP VIEW -


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7

INPUTS				OUTPUTS	
$\overline{S_D}$	$\overline{R_D}$	CK	D	Qn+1	$\overline{Qn+1}$
0	1	X	X	1	0
1	0	X	X	0	1
0	0	X	X	1	1
1	1	⌠	1	1	0
1	1	⌠	0	0	1
1	1	0	X	Qn	$\overline{Qn}$

0;LOW LEVEL
1;HIGH LEVEL
X;DON'T CARE

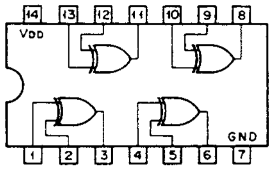

4
2
3
5
6
1
SD
RD
D
Q
10
12
11
9
8
13

NOTE :

TYPE	VDD
TC74HCT74AF	+5V
TC74AC74 TYPE	+2 to +5.5V
74ACT74 TYPE	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC86AN (TI)
SN74HC86ANS (TI) FLAT PACKAGE
TC74HC86AF (TOSHIBA) FLAT PACKAGE

C-MOS QUAD EXCLUSIVE OR GATES
- TOP VIEW -


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7

$Y = \bar{A} \cdot B + A \cdot \bar{B}$

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

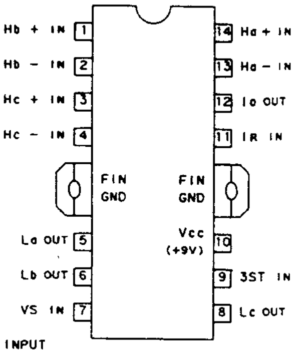
0;LOW LEVEL
1;HIGH LEVEL

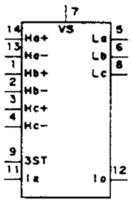
NOTE :

TYPE	VDD
TC74AC86 TYPE	+2 to +5.5V
OTHER TYPES	+2 to +6V

TA7262P-LB (TOSHIBA)

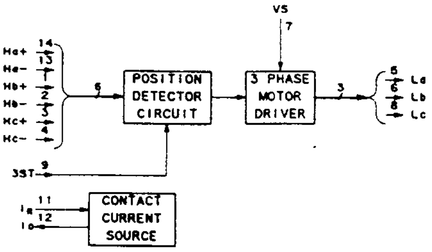
MOTOR DRIVER FOR DIRECT CURRENT COMPACT MOTOR
- TOP VIEW -


Hb + IN 1
Hb - IN 2
Hc + IN 3
Hc - IN 4
La OUT 5
Lb OUT 6
VS IN 7
14 Ha + IN
13 Ha - IN
12 Io OUT
11 IR IN
10
9 3ST IN
8 Lc OUT
FIN GND
FIN GND
Vcc (+9V)


7
VS
14 Ha+
13 Ha-
1 Hb+
2 Hb-
3 Hc+
4 Hc-
9 3ST
11 IR
La 5
Lb 6
Lc 8
Io 12

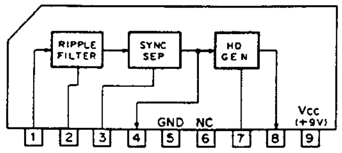
INPUT
3ST ;MOTOR ROTATIONAL DIRECTION CONTROL
Ha.Hb.Hc +/-;HOLE ELEMENT AMP
IR ;CONTACT CURRENT SOURCE
VS ;MOTOR INPUT VOLTAGE

OUTPUT
Io ;CONTACT CURRENT SOURCE
La.Lb.Lc ;3 PHASE MOTOR DRIVE


VS
7
Ha+ 14
Ha- 13
Hb+ 1
Hb- 2
Hc+ 3
Hc- 4
6
POSITION DETECTOR CIRCUIT
3 PHASE MOTOR DRIVER
3
5 La
6 Lb
8 Lc
3ST 9
IR 11
Io 12
CONTACT CURRENT SOURCE

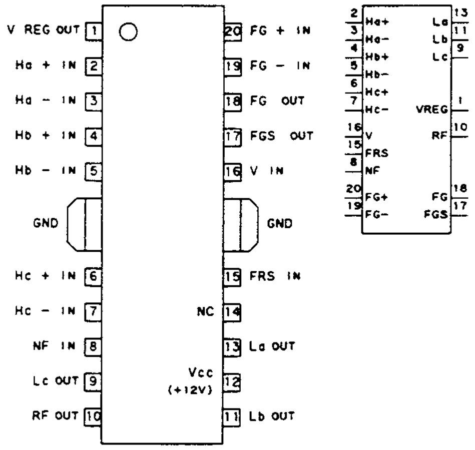
TA7357AP (TOSHIBA)

SYNC SEPARATOR/HD PULSE GENERATOR
- SIDE VIEW -


RIPPLE FILTER
SYNC SEP
HD GEN
GND
NC
Vcc (+9V)
1
2
3
4
5
6
7
8
9

TA8424F (TOSHIBA)

MOTOR DRIVER FOR DIRECT CURRENT COMPACT MOTOR
- TOP VIEW -

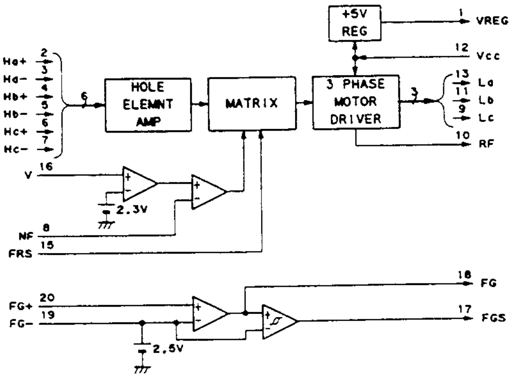

V REG OUT 1
Ha + IN 2
Ha - IN 3
Hb + IN 4
Hb - IN 5
GND
Hc + IN 6
Hc - IN 7
NF IN 8
Lc OUT 9
RF OUT 10
20 FG + IN
19 FG - IN
18 FG OUT
17 FGS OUT
16 V IN
GND
15 FRS IN
NC 14
13 La OUT
Vcc (+12V) 12
11 Lb OUT
Ha+
Ha-
Hb+
Hb-
Hc+
Hc-
V
FRS
NF
FG+
FG-
La
Lb
Lc
VREG
RF
FG
FGS

INPUT

FG +/-	;FG INPUT AMP
FRS	;MOTOR ROTATIONAL DIRECTION CONTROL
Ha.Hb.Hc +/-	;HOLE ELEMENT AMP
NF	;FEEDBACK OUTPUT CURRENT
V	;CONTROL VOLTAGE

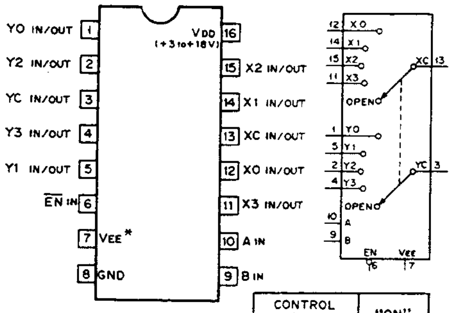
OUTPUT

FG	;FG GAIN AMP
FGS	;FG HYSTERESIS AMP
La.Lb.Lc	;3 PHASE MOTOR DRIVE
RF	;OUTPUT CURRENT DETECTOR
V REG	;VOLTAGE REGULATOR


+5V REG
VREG
Vcc
Ha+
Ha-
Hb+
Hb-
Hc+
Hc-
HOLE ELEMNT AMP
MATRIX
3 PHASE MOTOR DRIVER
La
Lb
Lc
RF
V
2.3V
NF
FRS
FG+
FG-
2.5V
FG
FGS

TC4052BF (TOSHIBA) FLAT PACKAGE

C-MOS DUAL 4-CHANNEL ANALOG MULTIPLEXERS/DEMULTIPLEXERS
- TOP VIEW -

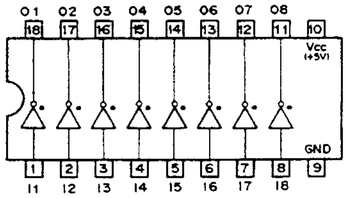

YO IN/OUT 1
Y2 IN/OUT 2
YC IN/OUT 3
Y3 IN/OUT 4
Y1 IN/OUT 5
EN IN 6
7 VEE*
8 GND
VDD (+3 to+18V) 16
15 X2 IN/OUT
14 X1 IN/OUT
13 XC IN/OUT
12 XO IN/OUT
11 X3 IN/OUT
10 A IN
9 B IN
X0
X1
X2
X3
XC
OPEN
Y0
Y1
Y2
Y3
YC
OPEN
A
B
EN
VEE

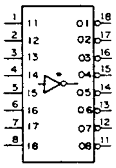
VEE* ; VDD-VEE = +3 to +18V

CONTROL INPUTS			"ON" CHANNEL	
EN	B	A		
0	0	0	0	
0	0	1	1	
0	1	0	2	0; LOW LEVEL
0	1	1	3	1; HIGH LEVEL
1	X	X	OPEN	X; DON'T CARE.

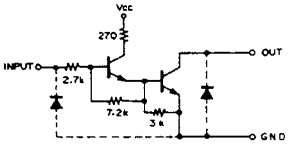
TD62381F (TOSHIBA) FLAT PACKAGE

OCTAL LOW SATURATION DRIVER
- TOP VIEW -


O1 O2 O3 O4 O5 O6 O7 O8
18 17 16 15 14 13 12 11 10
Vcc (+5V)
GND
1 2 3 4 5 6 7 8 9
I1 I2 I3 I4 I5 I6 I7 I8

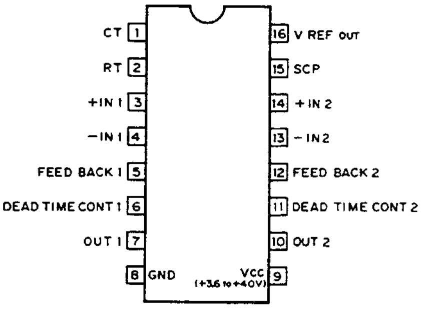

I1 O1
I2 O2
I3 O3
I4 O4
I5 O5
I6 O6
I7 O7
I8 O8

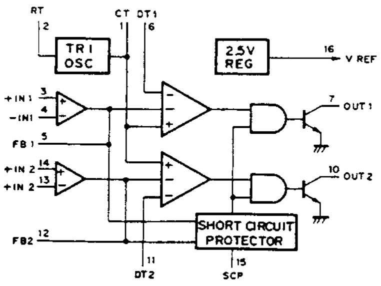
*; OPEN COLLECTOR


Vcc
270
INPUT
2.7k
7.2k
3k
OUT PUT
GND

TL1451ACNS (TI) FLAT PACKAGE

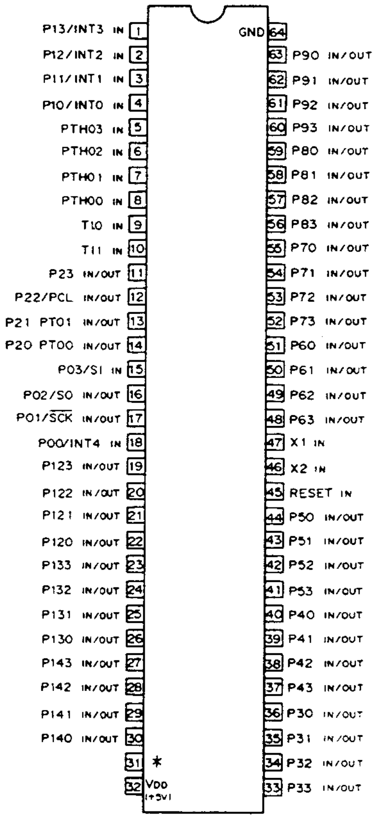
DUAL PWM POWER CONTROLLER
- TOP VIEW -

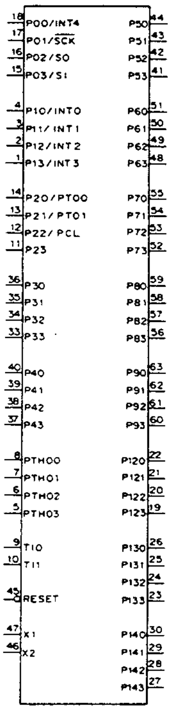

CT 1
RT 2
+IN 1 3
-IN 1 4
FEED BACK 1 5
DEAD TIME CONT 1 6
OUT 1 7
8 GND
Vcc (+3.6 to +40V) 9
16 V REF OUT
15 SCP
14 +IN 2
13 -IN 2
12 FEED BACK 2
11 DEAD TIME CONT 2
10 OUT 2


RT
CT
DT1
TRI OSC
2.5V REG
V REF
+IN 1
-IN 1
FB 1
+IN 2
+IN 2
OUT 1
OUT 2
FB2
SHORT CIRCUIT PROTECTOR
DT2
SCP

UPD75108CW (NEC)
UPD75P108CW (NEC)

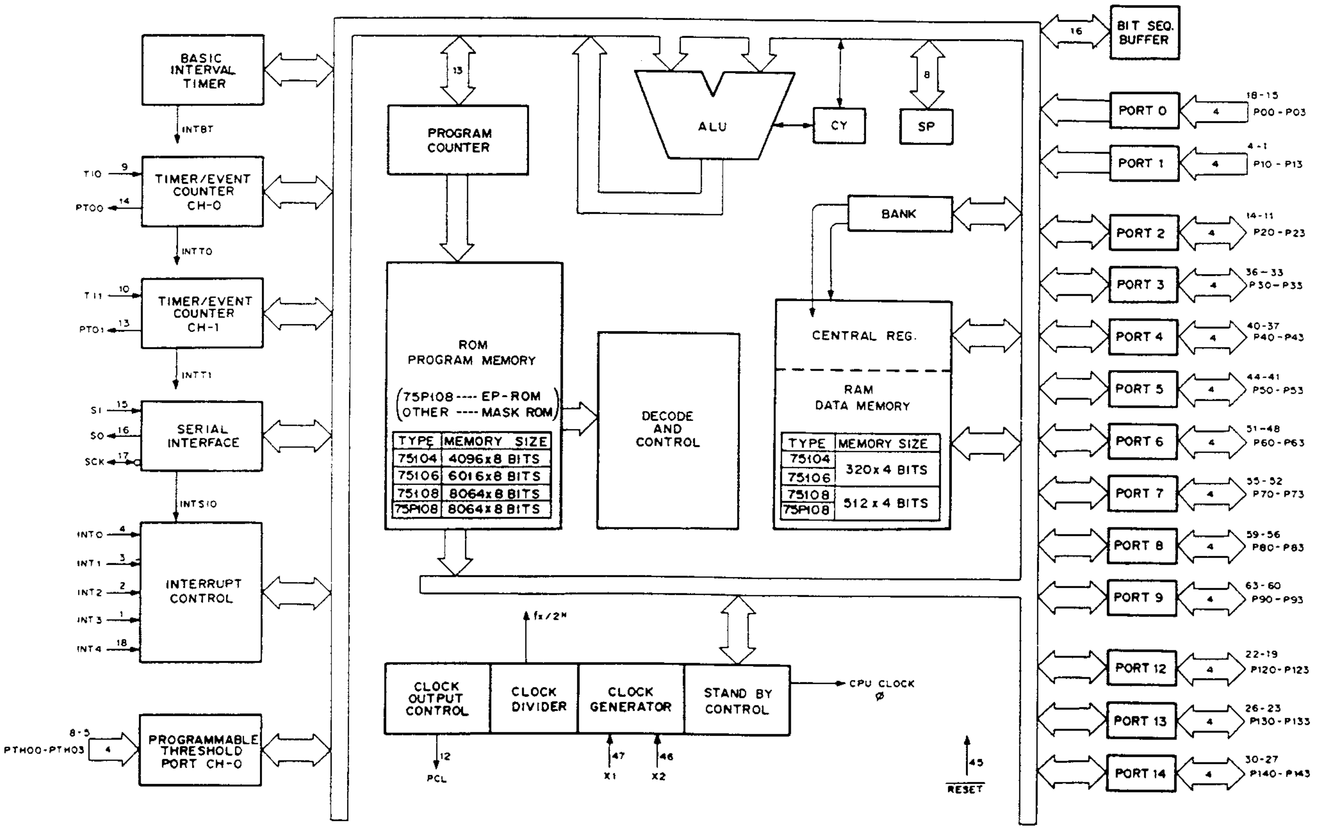
C-MOS 1 CHIP 4-BIT MICROCOMPUTER
– TOP VIEW –


P13/INT3 IN 1
P12/INT2 IN 2
P11/INT1 IN 3
P10/INT0 IN 4
PTH03 IN 5
PTH02 IN 6
PTH01 IN 7
PTH00 IN 8
TI0 IN 9
TI1 IN 10
P23 IN/OUT 11
P22/PCL IN/OUT 12
P21 PTO1 IN/OUT 13
P20 PTO0 IN/OUT 14
P03/SI IN 15
P02/SO IN/OUT 16
P01/SCK IN/OUT 17
P00/INT4 IN 18
P123 IN/OUT 19
P122 IN/OUT 20
P121 IN/OUT 21
P120 IN/OUT 22
P133 IN/OUT 23
P132 IN/OUT 24
P131 IN/OUT 25
P130 IN/OUT 26
P143 IN/OUT 27
P142 IN/OUT 28
P141 IN/OUT 29
P140 IN/OUT 30
31 *
32 VDD (+5V)
GND 64
63 P90 IN/OUT
62 P91 IN/OUT
61 P92 IN/OUT
60 P93 IN/OUT
59 P80 IN/OUT
58 P81 IN/OUT
57 P82 IN/OUT
56 P83 IN/OUT
55 P70 IN/OUT
54 P71 IN/OUT
53 P72 IN/OUT
52 P73 IN/OUT
51 P60 IN/OUT
50 P61 IN/OUT
49 P62 IN/OUT
48 P63 IN/OUT
47 X1 IN
46 X2 IN
45 RESET IN
44 P50 IN/OUT
43 P51 IN/OUT
42 P52 IN/OUT
41 P53 IN/OUT
40 P40 IN/OUT
39 P41 IN/OUT
38 P42 IN/OUT
37 P43 IN/OUT
36 P30 IN/OUT
35 P31 IN/OUT
34 P32 IN/OUT
33 P33 IN/OUT


18 P00/INT4
17 P01/SCK
16 P02/SO
15 P03/SI
4 P10/INT0
3 P11/INT1
2 P12/INT2
1 P13/INT3
14 P20/PTO0
13 P21/PTO1
12 P22/PCL
11 P23
36 P30
35 P31
34 P32
33 P33
40 P40
39 P41
38 P42
37 P43
8 PTH00
7 PTH01
6 PTH02
5 PTH03
9 TI0
10 TI1
45 RESET
47 X1
46 X2
P50 44
P51 43
P52 42
P53 41
P60 51
P61 50
P62 49
P63 48
P70 55
P71 54
P72 53
P73 52
P80 59
P81 58
P82 57
P83 56
P90 63
P91 62
P92 61
P93 60
P120 22
P121 21
P122 20
P123 19
P130 26
P131 25
P132 24
P133 23
P140 30
P141 29
P142 28
P143 27

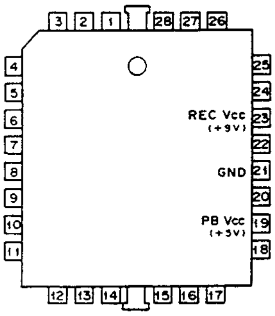
INT0 – INT4 : INTERRUPT INPUTS
P00 – P03 : 4-BIT INPUT PORT (PORT0)
P10 – P13 : 4-BIT INPUT PORT (PORT1)
P20 – P23 : 4-BIT I/O PORT (PORT2)
P30 – P33 : 4-BIT I/O PORT (PORT3), PROGRAMMABLE
P40 – P43 : 4-BIT I/O PORT (PORT4)
P50 – P53 : 4-BIT I/O PORT (PORT5)
P60 – P63 : 4-BIT I/O PORT (PORT6), PROGRAMMABLE
P70 – P73 : 4-BIT I/O PORT (PORT7)
P80 – P83 : 4-BIT I/O PORT (PORT8)
P90 – P93 : 4-BIT I/O PORT (PORT9)
P120 – P123 : 4-BIT I/O PORT (PORT12), OPEN DRAIN
P130 – P133 : 4-BIT I/O PORT (PORT13), OPEN DRAIN
P140 – P143 : 4-BIT I/O PORT (PORT14), OPEN DRAIN
PCL : CLOCK OUTPUT, PROGRAMABLE
PTH00 – PTH03 : THRESHOLD 4-BIT ANALOG INPUT PORT, PROGRAMABLE
PTO0 : TIMER/EVENT COUNTER OUTPUT (CH-1)
PTO1 : TIMER/EVENT COUNTER OUTPUT (CH-2)
RESET : SYSTEM RESET INPUT
SI : SERIAL INTERFACE DATA INPUT
SO : SERIAL INTERFACE DATA OUTPUT
SCK : SERIAL INTERFACE CLOCK INPUT/OUTPUT
TI0 : TIMER/EVENT COUNTER CLOCK INPUT (CH-0)
TI1 : TIMER/EVENT COUNTER CLOCK INPUT (CH-1)
X1, X2 : CONNECTED CRYSTAL FOR SYSTEM CLOCK GENERATE

*; PIN31
Vpp(+5V) ; 75P108 TYPE
NC ; OTHER TYPES

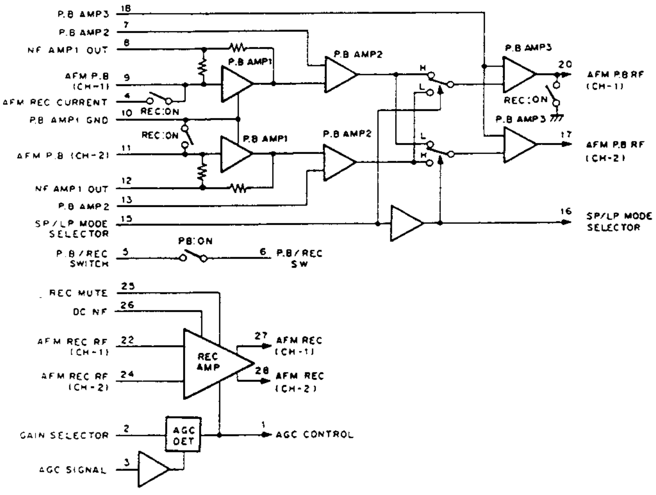

BASIC INTERVAL TIMER
INTBT
TI0 9
PTO0 14
TIMER/EVENT COUNTER CH-0
INTT0
TI1 10
PTO1 13
TIMER/EVENT COUNTER CH-1
INTT1
SI 15
SO 16
SCK 17
SERIAL INTERFACE
INTSIO
INT0 4
INT1 3
INT2 2
INT3 1
INT4 18
INTERRUPT CONTROL
8-5
PTH00-PTH03
4
PROGRAMMABLE THRESHOLD PORT CH-0
13
PROGRAM COUNTER
ALU
CY
8
SP
BANK
ROM PROGRAM MEMORY
(75P108 ---- EP-ROM
OTHER ---- MASK ROM)
TYPE | MEMORY SIZE
75104 | 4096x8 BITS
75106 | 6016x8 BITS
75108 | 8064x8 BITS
75P108 | 8064x8 BITS
DECODE AND CONTROL
CENTRAL REG.
RAM DATA MEMORY
TYPE | MEMORY SIZE
75104 75106 | 320x4 BITS
75108 75P108 | 512x4 BITS
fx/2^N
CLOCK OUTPUT CONTROL
CLOCK DIVIDER
CLOCK GENERATOR
STAND BY CONTROL
CPU CLOCK Φ
12 PCL
47 X1
46 X2
45 RESET
16 BIT SEQ. BUFFER
PORT 0 4 18-15 P00-P03
PORT 1 4 4-1 P10-P13
PORT 2 4 14-11 P20-P23
PORT 3 4 36-33 P30-P33
PORT 4 4 40-37 P40-P43
PORT 5 4 44-41 P50-P53
PORT 6 4 51-48 P60-P63
PORT 7 4 55-52 P70-P73
PORT 8 4 59-56 P80-P83
PORT 9 4 63-60 P90-P93
PORT 12 4 22-19 P120-P123
PORT 13 4 26-23 P130-P133
PORT 14 4 30-27 P140-P143

HA12115MP (HITACHI)

REC/PLAY AMPLIFIER FOR Hi-Fi VHS
– TOP VIEW –

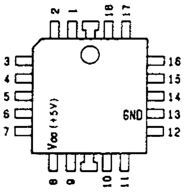

REC Vcc
(+9V)
GND
PB Vcc
(+5V)
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

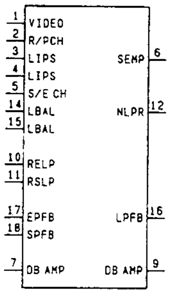
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	O	AGC CONTROL	15	I	SP/LP MODE SELECTOR
2	I	GAIN SELECTOR	16	O	SP/LP MODE SELECTOR
3	I	AGC SIGNAL	17	O	AFM P.B RF (CH-1)
4	I	AFM REC CURRENT	18	I	P.B AMP3
5	I	P.B/REC SWITCH	19	–	P.B Vcc
6	O	P.B/REC SWITCH	20		AFM P.B RF (CH-2)
7	I	P.B AMP2	21	–	GND
8	O	NF AMP1	22	I	AFM REC RF (CH-1)
9	I	AFM P.B (CH-1)	23	–	REC Vcc
10	I	P.B AMP1 GND	24	I	AFM REC RF (CH-2)
11	I	AFM P.B (CH-2)	25	I	REC MUTE
12	I	NF AMP1	26	I	DC NF
13	O	P.B AMP1	27	O	AFM REC (CH-1)
14	–	PRE Vcc	28	O	AFM REC (CH-2)


P.B AMP3 18
P.B AMP2 7
NF AMP1 OUT 8
AFM P.B (CH-1) 9
AFM REC CURRENT 4
P.B AMP1 GND 10
REC:ON
AFM P.B (CH-2) 11
NF AMP1 OUT 12
P.B AMP2 13
SP/LP MODE SELECTOR 15
P.B/REC SWITCH 5
PB:ON
6 P.B/REC SW
P.B AMP1
P.B AMP2
P.B AMP3
H
L
20 AFM P.B RF (CH-1)
17 AFM P.B RF (CH-2)
16 SP/LP MODE SELECTOR
REC MUTE 25
DC NF 26
AFM REC RF (CH-1) 22
AFM REC RF (CH-2) 24
REC AMP
27 AFM REC (CH-1)
28 AFM REC (CH-2)
GAIN SELECTOR 2
AGC DET
1 AGC CONTROL
AGC SIGNAL 3

VC2076MP (JVC)

Y SIGNAL PROCESSOR FOR VTR
– TOP VIEW –

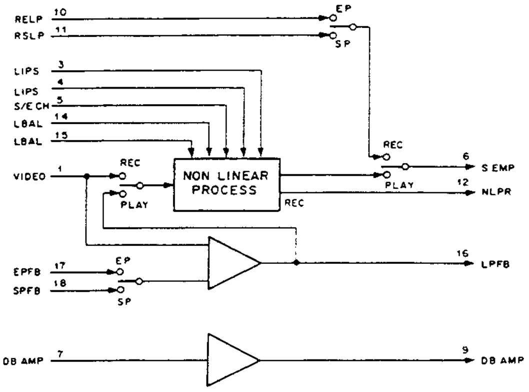

2
1
18
17
3
4
5
6
7
16
15
14
13
12
Vcc (+5V)
GND
8
9
10
11


1 VIDEO
2 R/PCH
3 LIPS
4 LIPS
5 S/E CH
14 LBAL
15 LBAL
10 RELP
11 RSLP
17 EPFB
18 SPFB
7 DB AMP
SEMP 6
NLPR 12
LPFB 16
DB AMP 9

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	VIDEO	10	I	RELP
2	I	R/P CH	11	I	RSLP
3	I	LIPS	12	O	NLPR
4	I	LIPS	13	–	GND
5	I	S/E CH	14	I	LBAL
6	O	S EMP	15	I	LBAL
7	I	DB AMP	16	O	LPFB
8	–	Vcc	17	I	EPFB
9	O	DB AMP	18	I	SPFB

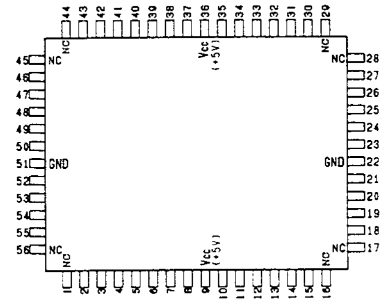
INPUT
DB AMP : 6dB AMP IN
EPFB : PB EP LINEAR PROCESS FEEDBACK
LBAL : LIMITER BALANCE TERMINAL
LIPS : LIMITER POWER SMOOTHING TERMINAL
R/P CH : REC/PB CHANGE
RELP : REC EP LINEAR PROCESS
RSLP : REC SP LINEAR PROCESS
S/E CH : SP/EP CHANGE
SPFB : PB SP LINEAR PROCESS FEEDBACK
VIDEO : VIDEO IN

OUTPUT
DB AMP : 6dB AMP OUT
LPFB : PB LINEAR PROCESS FEEDBACK
NLPR : NON LINEAR PROCESS
S EMP : SUB EMPHASIS


RELP 10
RSLP 11
EP
SP
LIPS 3
LIPS 4
S/E CH 5
LBAL 14
LBAL 15
VIDEO 1
REC
PLAY
NON LINEAR PROCESS
REC
6 S EMP
PLAY
12 NLPR
REC
EPFB 17
SPFB 18
EP
SP
16 LPFB
DB AMP 7
9 DB AMP

M52059AFP (MITSUBISHI)

– TOP VIEW –


44
43
42
41
40
39
38
37
36
35
34
33
32
31
30
29
NC
Vcc (+5V)
NC
45
46
47
48
49
50
51
52
53
54
55
56
NC
GND
NC
28
27
26
25
24
23
22
21
20
19
18
17
NC
GND
NC
NC
Vcc (+5V)
NC
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

(Vcc = + 5V)

PIN No.	I/O	SYMBOL	PIN No.	I/O	SYMBOL	PIN No.	I/O	SYMBOL
1	–	NC	20	I	REC ACC	39	I	HSS
2	I	MAIN BM	21	I	P/S/N SW	40	–	MMV TIM
3	I	ROTARY SW	22	–	GND	41	O	SUB BM
4	I	P/B P ADJ	23	I	VCO ADJ	42	O	HP
5	I	MAIN BM BP	24	–	B ACC F	43	O	P/B DET
6	O	SW2	25	–	REC AFC F	44	–	NC
7	O	ACC	26	I	B ADJ	45	–	NC
8	I	ACC	27	–	B ERR DET HPF	46	O	BGP
9	–	Vcc	28	–	NC	47	I	2/4/6 SW
10	I	REC C	29	–	NC	48	I	R/T/P SW
11	I	SUB BM BP	30	I	P/B G ADJ	49	O	PB OUT AMP
12	O	SW1	31	O	S/L DET	50	I	CPS/CPN/VHS SW
13	I	PB LOW C	32	–	PB APC F	51	–	GND
14	I	REC OUT AMP	33	–	REC APC F	52	I	COMB AMP
15	O	REC LOW C	34	O	VCXO 1	53	–	KILLER REF
16	–	NC	35	O	VCXO 2	54	O	COMB DRIVE
17	–	NC	36	–	Vcc	55	–	KILLER F
18	I	PB ACC	37	I	VCXO	56	–	NC
19	–	C ACC F	38	–	P/B DET F			

INPUT

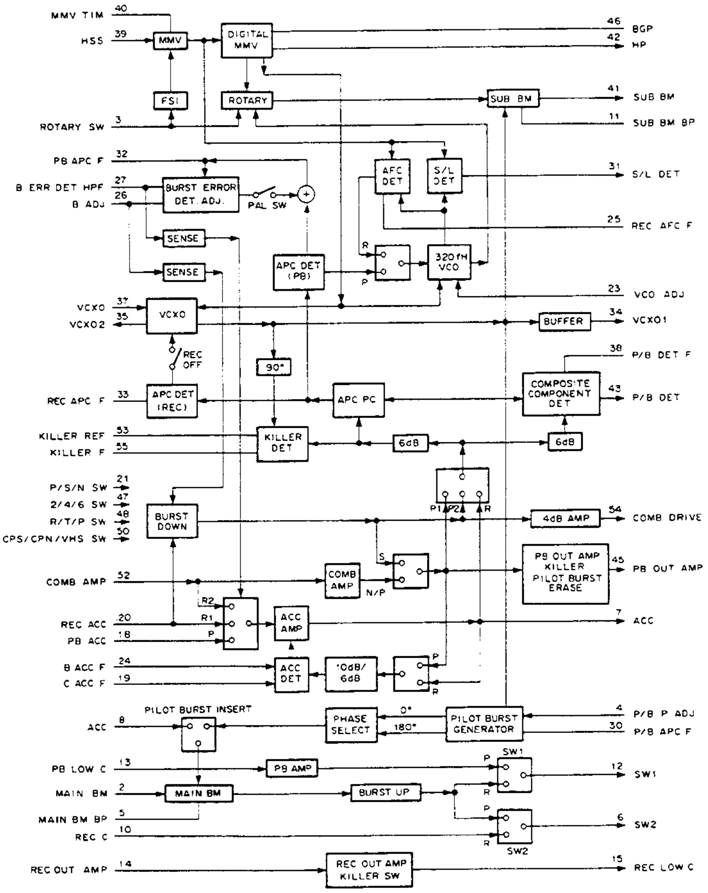
2/4/6 SW : 2H/4H/6H SWITCH CONTROL
ACC : ACC OUTPUT
B ADJ : BURST ADJUST
COMB AMP : COMB AMPLIFIER
CPS/CPN/VHS SW : COMPSITE/COMPONENT/VHS SWITCH CONTROL
HSS : HORIZONTAL SYNC SIGNAL
MAIN BM : MAIN BALANCED MODULATOR
MAIN BM BP : MAIN BALANCED MODULATOR BYPASS CONTROL
P/B G ADJ : PILOT BURST GAIN ADJUST
P/B P ADJ : PILOT BURST PHASE ADJUST
P/S/N SW : PAL/SECAM/NTSC SWITCH CONTROL
PB ACC : AUTOMATIC COLOR CONTROL AMPLIFIER FOR PB
PB LOW C : PB LOW RESONANCE CHROMA
R/T/P SW : REC/TRICK/PB SWITCH CONTROL
REC ACC : AUTOMATIC COLOR CONTROL AMPLIFIER FOR REC
REC C : REC CHROMA SIGNAL
REC OUT AMP : REC SIGNAL OUTPUT AMPLIFIER
ROTARY SW : ROTATION SWITCH CONTROL
SUB BM BP : SUB BALANCED MODULATOR BYPASS CONTROL
VCO ADJ : 320 fH VCO ADJUST
VCXO : VOLTAGE CONTROLED CRYSTAL OSCILLATOR

OUTPUT

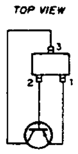
ACC : AUTOMATIC COLOR CONTROL AMPLIFITER
BGP : BURST GATE PULSE
COMB DRIVE : COMB DRIVE
HP : HORIZONTAL PULSE
P/B DET : PILOT BURST DETECTTION
PB OUT AMP : PB SIGNAL OUTPUT AMPLIFIER
REC LOW C : REC LOW RESONANCE CHROMA
S/L DET : SIDE LOCK DETECTION
SUB BM : SUB BALANCED MODULATOR
SW1 : SWITCH 1
SW2 : SWITCH 2
VCXO 1 : BUFFERED VCXO
VCXO 2 : VOLTAGE CONTROLED CRYSTAL OSCILLATOR

OTHER

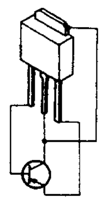
B ACC F : AUTOMATIC COLOR CONTROL FILTER FOR BURST
B ERR DET HPF : BURST ERROR DETECT HIGH-PASS FILTER
C ACC F : AUTOMATIC COLOR CONTROL FILTER FOR CHROMA
KILLER F : COLOR KILLER FILTER
KILLER REF : COLOR KILLER REFERENCE FILTER
MMV TIM : MONOSTABLE MULTIVIBRATOR TIMING TIME CONSTANT
P/B DET F : PILOT BURST DETECTION FILTER
PB APC F : AUTOMATIC FREQUENCY CONTROL FILTER FOR PB
REC AFC F : AUTOMATIC FREQUENCY CONTROL FILTER FOR REC
REC APC F : AUTOMATIC PHASE CONTROL FILTER FOR REC


MMV TIM 40
HSS 39
MMV
DIGITAL MMV
46 BGP
42 HP
FSI
ROTARY
SUB BM
41 SUB BM
11 SUB BM BP
ROTARY SW 3
PB APC F 32
B ERR DET HPF 27
B ADJ 26
BURST ERROR DET. ADJ.
PAL SW
+
AFC DET
S/L DET
31 S/L DET
25 REC AFC F
SENSE
SENSE
APC DET (PB)
R
P
320 fH VCO
23 VCO ADJ
VCXO 37
VCXO2 35
VCXO
BUFFER
34 VCXO1
REC OFF
90°
38 P/B DET F
COMPOSITE COMPONENT DET
43 P/B DET
REC APC F 33
APC DET (REC)
APC PC
KILLER REF 53
KILLER F 55
KILLER DET
6dB
6dB
P/S/N SW 21
2/4/6 SW 47
R/T/P SW 48
CPS/CPN/VHS SW 50
BURST DOWN
P1 P2 R
4dB AMP
54 COMB DRIVE
S
PB OUT AMP KILLER PILOT BURST ERASE
45 PB OUT AMP
COMB AMP 52
COMB AMP
N/P
R2
R1
P
ACC AMP
REC ACC 20
PB ACC 18
7 ACC
B ACC F 24
C ACC F 19
ACC DET
10dB/ 6dB
P
R
PILOT BURST INSERT
ACC 8
PHASE SELECT
0°
180°
PILOT BURST GENERATOR
4 P/B P ADJ
30 P/B APC F
SW1
PB LOW C 13
PB AMP
P
R
12 SW1
MAIN BM 2
MAIN BM
BURST UP
MAIN BM BP 5
REC C 10
P
R
SW2
6 SW2
REC OUT AMP 14
REC OUT AMP KILLER SW
15 REC LOW C

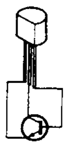
TRANSISTOR


TOP VIEW
3
2
1

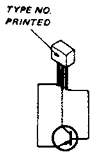
2SA1162
2SA1226
2SA812



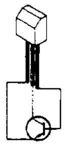
2SB1204



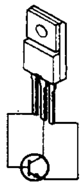
2SC1815
2SC2878


TYPE NO. PRINTED

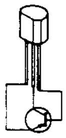
2SA1175



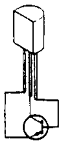
2SB733



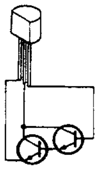
2SC4558



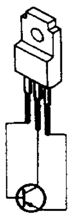
2SA1319



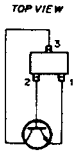
2SB739



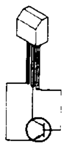
2SD1111



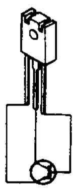
2SA1441
2SB1370


TOP VIEW
3
2
1

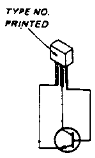
2SC1623
2SC2712
2SC2715
2SC3326N
2SC3735



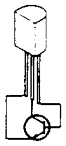
2SD774



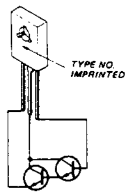
2SB1142


TYPE NO. PRINTED

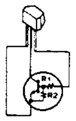
2SC2785



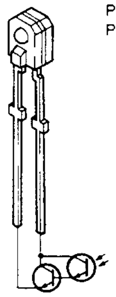
2SD788


TYPE NO IMPRINTED

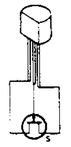
2SD894



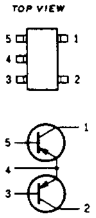
DTC144ES (R1 = 47K, R2 = 47K)



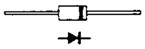
PT483F1
PT483F1S



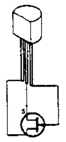
2SK105A


TOP VIEW
5
4
3
1
2
1
5
4
3
2

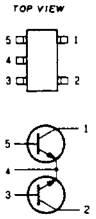
FMS1FE



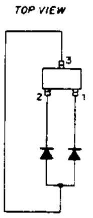
10E2
1SS119



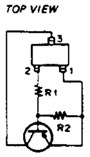
2SK523


TOP VIEW
5
4
3
1
2
1
5
4
3
2

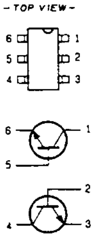
FMW1


TOP VIEW
3
2
1

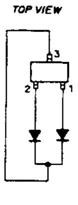
1S2835
1S2836


TOP VIEW
3
2
1
R1
R2

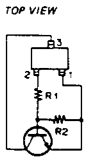
DTA144EK (R1 = 47K, R2 = 47K)
DTB143EK (R1 = 4.7K, R2 = 4.7K)


- TOP VIEW -
6
5
4
1
2
3
6
1
5
2
4
3

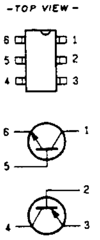
IMX1


TOP VIEW
3
2
1

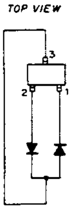
1S2837
MA152WK


TOP VIEW
3
2
1
R1
R2

DTC114YK (R1 = 10K, R2 = 47K)
DTC124EK (R1 = 22K, R2 = 22K)
DTC144EK (R1 = 47K, R2 = 47K)

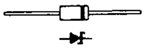

- TOP VIEW -
6
5
4
1
2
3
6
1
5
2
4
3

IMZ1

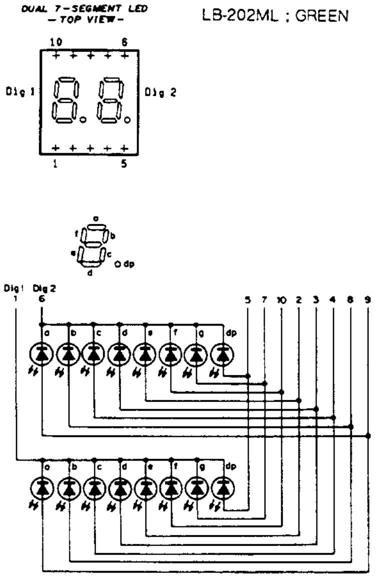

TOP VIEW
3
2
1

1SS123
1SS226

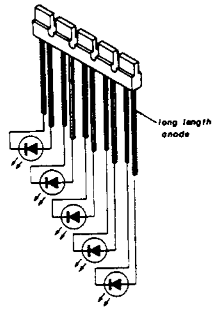
DIODE, PHOTO-COUPLER



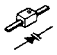
1SS99
ERB81-004
ERC81-004


DUAL 7-SEGMENT LED
- TOP VIEW -
10
6
Dig 1
Dig 2
1
5
a
b
c
d
e
f
g
dp
Dig1
Dig2
1
6
5 7 10 2 3 4 8 9

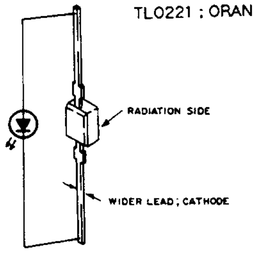
LB-202ML : GREEN


long length anode

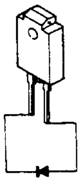
SLJ-165MG5HLF ; GREEN
SLJ-165MGD5F ; GREEN



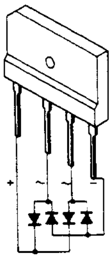
1T32
1T33C


RADIATION SIDE
WIDER LEAD ; CATHODE

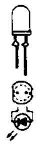
TL0221 ; ORANGE



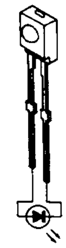
ERC62M-004



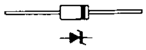
RBV-602



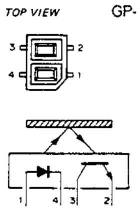
TLUG154 ; GREEN



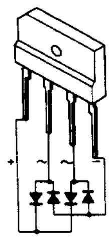
GL451V ; INFRARED
GL451VS1 ; INFRARED



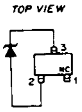
RD ? ?ES
RD ? ?ESB ?
RD ? ?FB ?
RD ? ?M


TOP VIEW
3
2
4
1
1
4
3
2

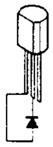
GP-2S09



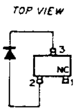
RBA-406B


TOP VIEW
3
NC
2
1

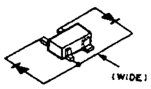
RD ? ?M-B ?
UZM ? ?X



SB05-05NP


TOP VIEW
3
NC
2
1

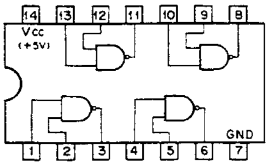
SB05-05CP

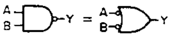


ND411G-2

74F00SJX(NS)

TTL 2-INPUT POSITIVE-NAND GATE
- TOP VIEW -


14
13
12
11
10
9
8
Vcc
(+5V)
GND
1
2
3
4
5
6
7



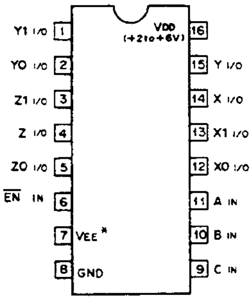
$Y = \overline{A \cdot B} = \bar{A} + \bar{B}$

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

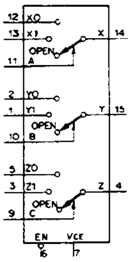
0; LOW LEVEL
1; HIGH LEVEL

MC74HC4053F(MOTOROLA)FLAT PACKAGE

C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER
- TOP VIEW -


Y1 I/O 1
Y0 I/O 2
Z1 I/O 3
Z I/O 4
Z0 I/O 5
EN IN 6
7 VEE*
8 GND
VDD (+2to+6V) 16
15 Y I/O
14 X I/O
13 X1 I/O
12 X0 I/O
11 A IN
10 B IN
9 C IN

VEE* ; VDD−VEE = +3 to +12V
VEE ≦ GND

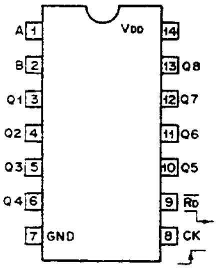

12 X0
13 X1
OPEN
11 A
X 14
2 Y0
1 Y1
OPEN
10 B
Y 15
5 Z0
3 Z1
OPEN
9 C
Z 4
EN
VEE
16
7

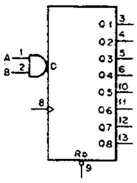
CONTROL INPUTS				ON CHANNEL		
EN	SELECT					
	C	B	A			
0	0	0	0	Z0	Y0	X0
0	0	0	1	Z0	Y0	X1
0	0	1	0	Z0	Y1	X0
0	0	1	1	Z0	Y1	X1
0	1	0	0	Z1	Y0	X0
0	1	0	1	Z1	Y0	X1
0	1	1	0	Z1	Y1	X0
0	1	1	1	Z1	Y1	X1
1	X	X	X	OPEN		

0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE

SN74HC164ANS(TI)FLAT PACKAGE

C-MOS 8-BIT SERIAL-IN/PARALLEL-OUT SHIFT REGISTER
- TOP VIEW -


A 1
B 2
Q1 3
Q2 4
Q3 5
Q4 6
7 GND
VDD 14
13 Q8
12 Q7
11 Q6
10 Q5
9 RD
8 CK

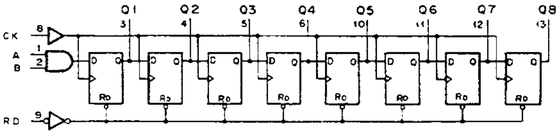

A 1
B 2
C
8
Q1 3
Q2 4
Q3 5
Q4 6
Q5 10
Q6 11
Q7 12
Q8 13
RD
9

INPUTS				OUTPUTS			
RD	CK	A	B	Q1	Q2	----	Q8
0	X	X	X	0	0	0	0
1	0	X	X	Q1o	Q2o	----	Q8o
1	↑	1	1	1	Q1n	----	Q7n
1	↑	0	X	0	Q1n	----	Q7n
1	↑	X	0	0	Q1n	----	Q7n

0;LOW LEVEL
1;HIGH LEVEL
X;DON'T CARE

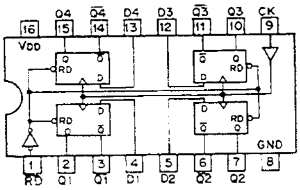
NOTE :

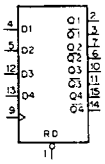
TYPE	VDD
AC/VHC	+2 to +5.5V
HC	+2 to +6V
HCT	+5V


Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
3
4
5
6
10
11
12
13
CK 8
A 1
B 2
RD 9
D
Q
RD

SN74HC175ANS(TI)FLAT PACKAGE

C-MOS QUAD D-TYPE FLIP-FLOPS WITH RESET
- TOP VIEW -


Q4
Q̄4
D4
D3
Q̄3
Q3
CK
16
15
14
13
12
11
10
9
VDD
GND
RD
D
Q
Q̄
1
2
3
4
5
6
7
8
RD
Q1
Q̄1
D1
D2
Q̄2
Q2


4 D1
5 D2
12 D3
13 D4
9
Q1 2
Q̄1 3
Q2 7
Q̄2 6
Q3 10
Q̄3 11
Q4 15
Q̄4 14
RD
1

RD	CK	D	Q	Q̄
0	X	X	0	1
1	↑	1	1	0
1	↑	0	0	1
1	0	X	Q0	Q̄0

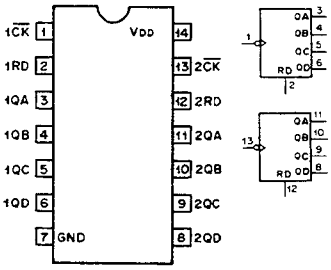
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
Q0 ; NO CHANGE
Q̄0 ; NO CHANGE

NOTE :

TYPE	VDD
AC TYPE	+2 to +5.5 V
74ACT175 TYPE	+4.5V to 5.5 V
OTHER TYPES	+2 to +6 V

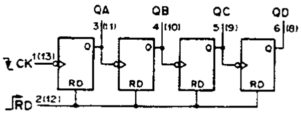
SN74HC393ANS(TI)FLAT PACKAGE

C-MOS DUAL 4-BIT BINARY COUNTER
- TOP VIEW -


1$\overline{CK}$ 1
1RD 2
1QA 3
1QB 4
1QC 5
1QD 6
7 GND
VDD 14
13 2$\overline{CK}$
12 2RD
11 2QA
10 2QB
9 2QC
8 2QD
QA 3
QB 4
QC 5
RD QD 6
1
2
QA 11
QB 10
QC 9
RD QD 8
13
12

COUNT SEQUENCE

COUNT	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1


QA
QB
QC
QD
3(11)
4(10)
5(9)
6(8)
CK 1(13)
RD 2(12)
Q
RD

RESET/COUNT FUNCTION

RD	QD	QC	QB	QA
1	0	0	0	0
0	COUNT			

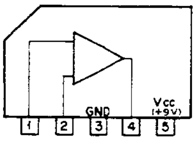
0; LOW LEVEL
1; HIGH LEVEL

NOTE :

TYPE	VDD
AC/VHC	+2 to +5.5V
HC	+2 to +6V

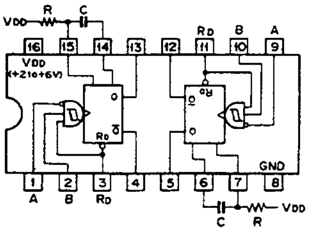
TA7060AP(TOSHIBA)

LINEAR AMP
- SIDE VIEW -


GND
Vcc (+9V)
1
2
3
4
5

TC74HC221AF(TOSHIBA)FLAT PACKAGE

C-MOS MONOSTABLE MULTIVIBRATOR WITH SCHMITT TRIGGER INPUT
- TOP VIEW -


VDD
R
C
RD
B
A
16
15
14
13
12
11
10
9
VDD (+2 to +6V)
Q
RD $\overline{Q}$
GND
1
2
3
4
5
6
7
8
A
B
RD
C
R
VDD

INPUTS			OUTPUTS	
RD	A	B	Q	$\overline{Q}$
0	X	X	0	1
X	1	X	0	1
X	X	0	0	1
1	0	↑	⎍	⊔
1	↓	1	⎍	⊔
↑	0	1	⎍	⊔

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

OUTPUT PULSE WIDTH = 0.7CR

SECTION 13
BOARD LAYOUTS AND SCHEMATIC DIAGRAMS

CIRCUIT FUNCTION OF THE PRINTED CIRCUIT BOARD

SYSTEM	BOARD	CIRCUIT FUNCTION	PAGE
VIDEO	RP-62A	Video & AFM Head Amp.	13-2
	CR-39	Chroma Process	13-4
	VM-12P (inc. DUS-763*d)	Y/C Noise Reducer, Video Memory, Chroma Decorder/ Encoder	13-12 (13-17 (a))
	VO-37A (inc. DUS-592*a)	Y Process, Video Output Process	13-24 (13-31)
AUDIO	AU-161A	AFM Process, Normal Audio Process	13-32
	AH-28	Audio/Erase/CTL Head	13-59
SERVO • SYSTEM CONTROL	SS-49A (inc. DUS-445 inc. DUS-534)	Servo & System Control	13-38 (13-41 13-45)
	DR-153(a)*b	T-Reel Driver	13-53
	DR-153(b)*b	S-Reel Driver	13-53
	DR-167	CAM Mode Detect & Drum Motor Driver	13-50
	DR-176	Capstan FG Amp. & Capstan Motor Driver	13-51
	DUS-544	Capacitor for T-Brake Solenoid	13-50
	CM-14	Cassette Compartment Motor	13-58(13-39)
	LD-35	Loading Motor	13-58(13-39)
	LE-80*b	Tape Top/End LED	13-52
	LE-86*b	Tension Regulator LED	13-52
	LE-131*c	Tension Regulator LED	13-52 (a)
	KY-219	Function Key/LED/Switch Remocon Interface	13-48
	DP-165	Counter Display	13-48
	SE-151*b	Tape End Sensor	13-50
	SE-152*b	Tape Top Sensor	13-52
	SE-159*b	Tension Regulator CDS Detect	13-52
	SE-224*c	Tape End Sensor	13-50
	SE-230*c	Tension Regulator CDS Detect	13-52 (a)
	SW-668*c	Miss REC SW	13-52 (a)
	SW-673*c	VHS Cassette SW	13-52 (a)
	HN-160*b	Connection	13-52
	HN-198A*c	Connection	13-52 (a)
POWER	AC-136	AC Input	13-54
	DC-53A	AC-DC Power Regulator	13-54
CONNECTOR	CP-183 (inc. DUS-442)	Connection of Rear Connector	13-56 (13-56)
	CN-633	Connection of Front Connector	13-56

∗ a : S/N 10031 and higher
∗ b : S/N 10001 to 12290
∗ c : S/N 12291 and higher
∗ d : S/N 13551 to 15190

Note : The mentioned items at waveform photograph of this section are measurement point, board location, and machine operation mode.

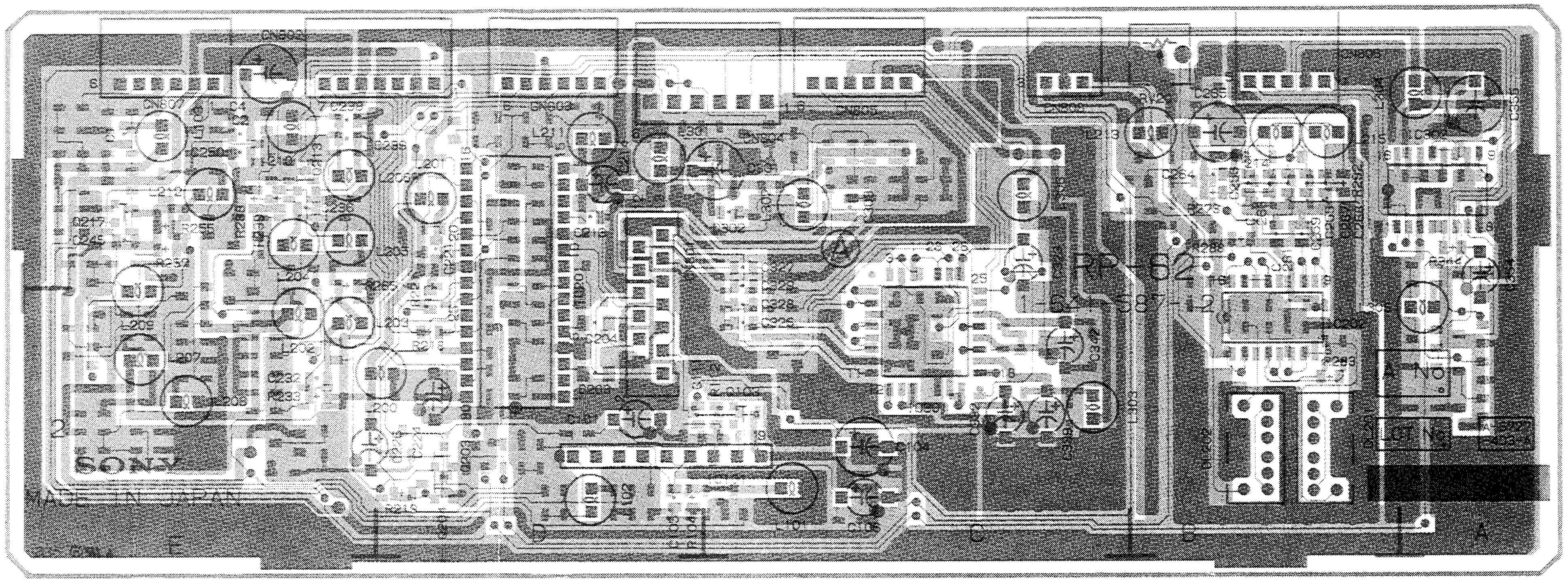
RP-62A; VIDEO & AFM HEAD AMP

S/N 10001 to 11230 (EK)

RP-62A (1-641-587-12)

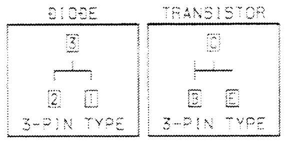
CN801	D-2
CN802	E-1
CN803	D-1
CN804	C-1
CN805	C-1
CN806	B-1
CN807	E-1
CN808	C-1
DL201	B-2
DL202	B-2
D201	D-1 *
D202	E-2 *
D203	E-1 *
D301	C-2 *
IC101	C-2
IC201	D-1
IC202	B-2
IC301	C-2
IC302	A-1
Q101	D-2 *
Q102	C-2 *
Q103	C-2
Q104	E-1 *
Q105	E-1 *
Q201	D-2 *
Q202	D-2 *
Q203	D-2
Q204	D-2
Q210	E-2 *
Q211	E-1 *
Q212	E-2 *
Q213	E-1
Q214	E-2 *
Q215	D-1 *
Q216	D-2 *
Q217	E-1
Q218	E-1 *
Q219	E-1 *
Q220	D-2 *
Q221	B-1 *
Q222	B-1 *
Q223	B-1 *
Q301	C-1 *
Q302	C-1 *
Q303	C-1 *
Q304	C-2 *
Q310	A-2 *
Q311	A-1 *
Q312	A-2 *
Q313	A-2 *
Q314	A-2 *
Q315	B-1 *
RV201	B-1

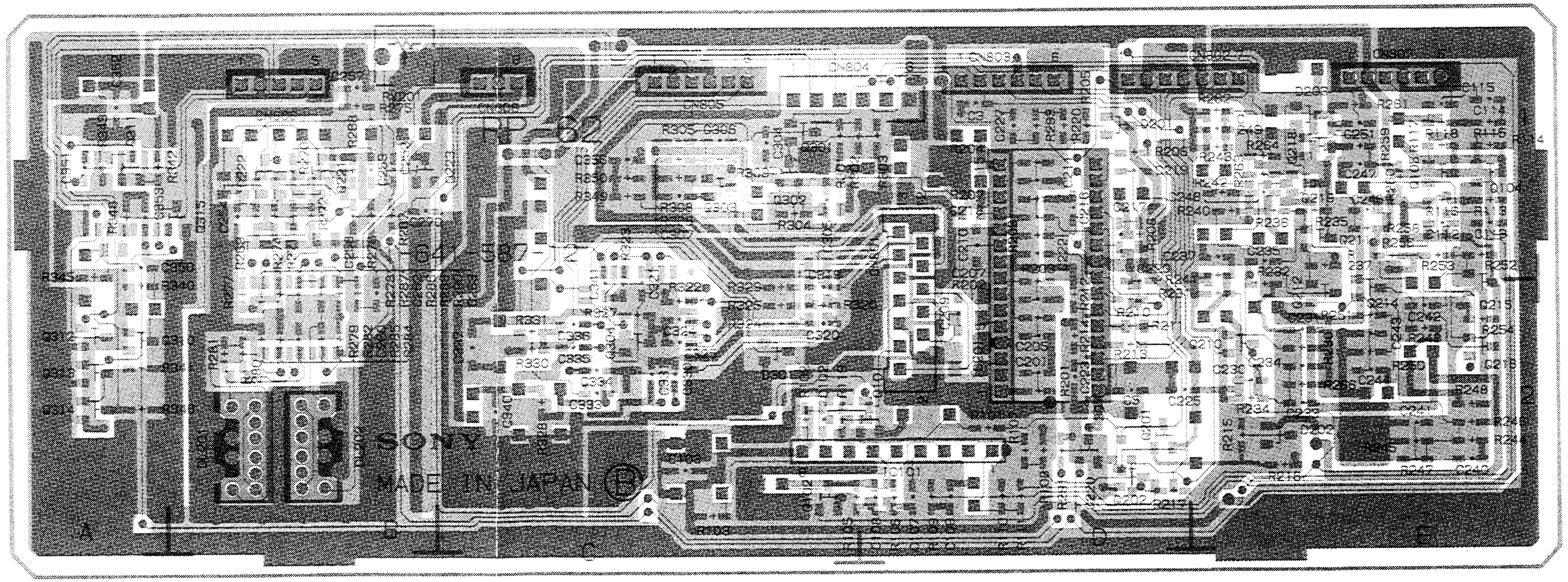
* mark ; B SIDE mount


CN801
CN802
CN803
CN804
CN805
CN806
CN807
CN808
RP-62
A
SONY
MADE IN JAPAN
2
1
E
D
C
B
A

RP-62/A — A SIDE —
1-641-587-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

SURFACE MOUNT TYPE
DIODE/TRANSISTOR PIN LAYOUTS


DIODE
3
2
1
3-PIN TYPE
TRANSISTOR
C
B
E
3-PIN TYPE


CN804
CN805
CN808
RP-62
1-641-587
SONY
MADE IN JAPAN
B
A
B
C
D
E

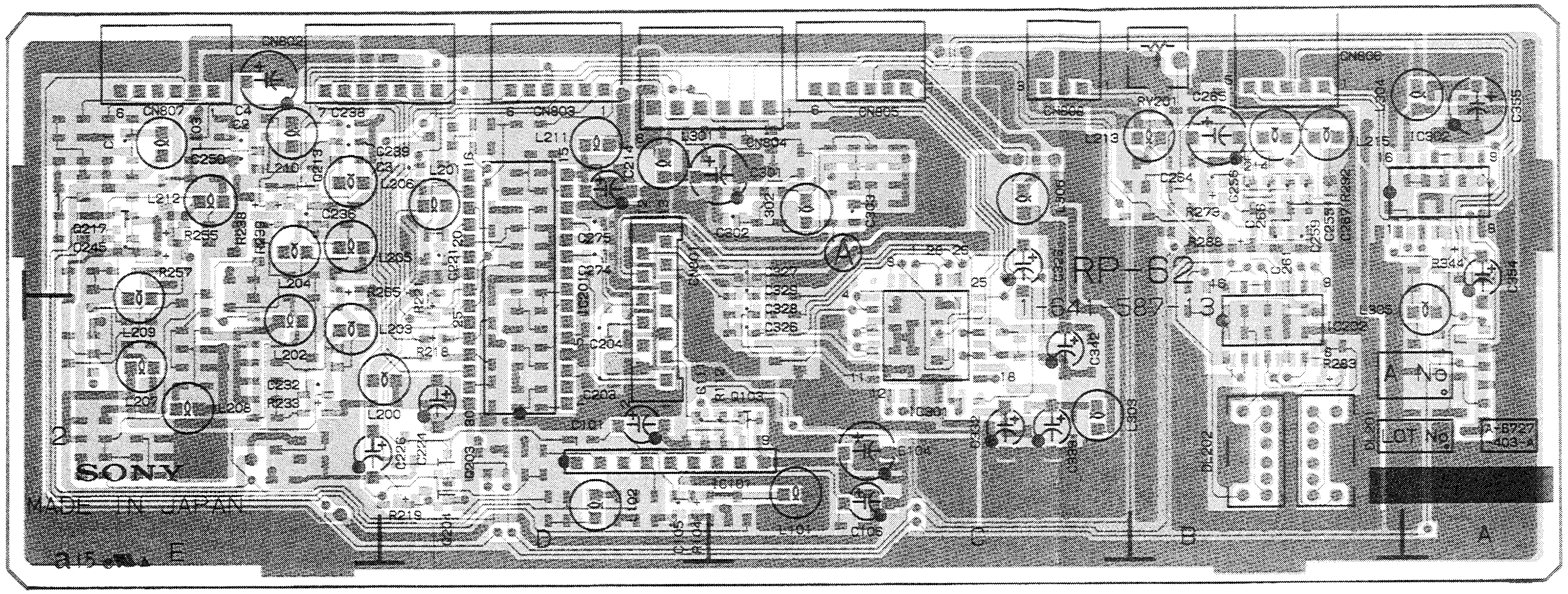
RP-62/A — B SIDE —
1-641-587-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

RP-62A ; VIDEO & AFM HEAD AMP S/N 11231 and higher (EK)

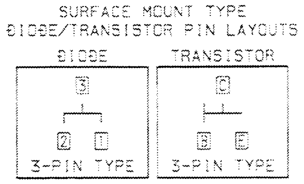
RP-62A (1-641-587-13)

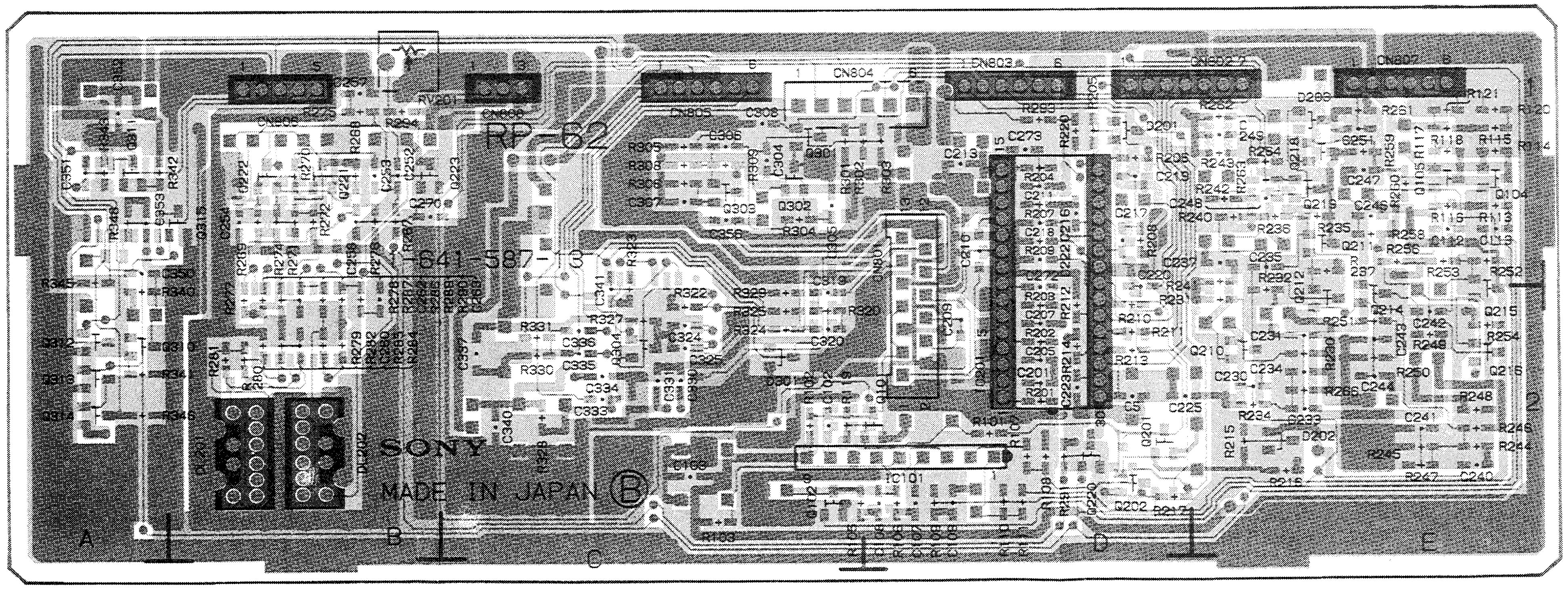
CN801	D-2
CN802	E-1
CN803	D-1
CN804	C-1
CN805	C-1
CN806	B-1
CN807	E-1
CN808	C-1
DL201	B-2
DL202	B-2
D201	D-1 *
D202	E-2 *
D203	E-1 *
D301	C-2 *
IC101	C-2
IC201	D-1
IC202	B-2
IC301	C-2
IC302	A-1
Q101	D-2 *
Q102	C-2 *
Q103	C-2
Q104	E-1 *
Q105	E-1 *
Q201	D-2 *
Q202	D-2 *
Q203	D-2
Q204	D-2
Q210	E-2 *
Q211	E-1 *
Q212	E-2 *
Q213	E-1
Q214	E-2 *
Q215	E-1 *
Q216	E-2 *
Q217	E-1
Q218	E-1 *
Q219	E-1 *
Q220	D-2 *
Q221	B-1 *
Q222	B-1 *
Q223	B-1 *
Q301	C-1 *
Q302	C-1 *
Q303	C-1 *
Q304	C-2 *
Q310	A-2 *
Q311	A-1 *
Q312	A-2 *
Q313	A-2 *
Q314	A-2 *
Q315	B-1 *

* mark ; B SIDE mount


CN802
CN807
CN803
CN805
CN806
CN808
RP-62
1-641-587-13
SONY
MADE IN JAPAN
A No
LOT No
E
D
C
B
A
1
2

RP-62/A — A SIDE —
1-641-587-13 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

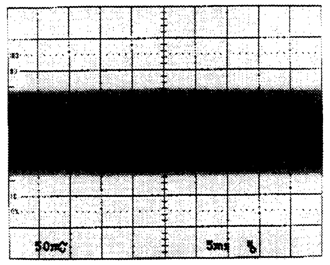

SURFACE MOUNT TYPE
DIODE/TRANSISTOR PIN LAYOUTS
DIODE
TRANSISTOR
3
2
1
C
B
E
3-PIN TYPE
3-PIN TYPE


CN806
CN808
CN805
CN804
CN803
CN802
CN807
RP-62
1-641-587-13
IC101
SONY
MADE IN JAPAN
B
A
B
C
D
E
1
2

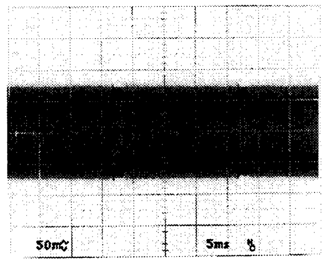
RP-62/A — B SIDE —
1-641-587-13 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

RP-62A; VIDEO & AFM HEAD AMP

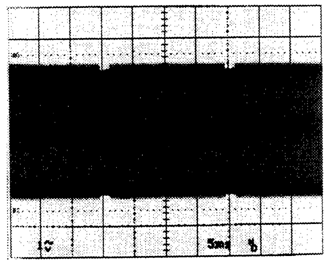
① CN804 pin 1 (C-1) REC mode



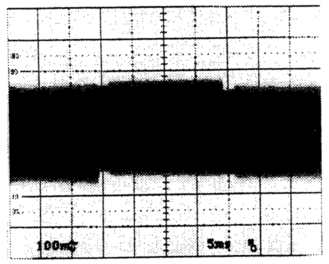
② CN804 pin 2 (C-1) PB mode (S)
CN804 pin 5 (C-1) (TRIG)



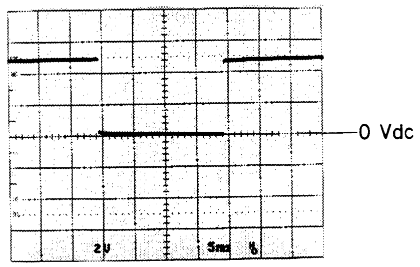
③ CN804 pin 3 (C-1) REC mode
CN804 pin 5 (C-1) (TRIG)



④ CN804 pin 4 (C-1) PB mode (N)
CN804 pin 5 (C-1) (TRIG)



⑤ CN804 pin 5 (C-1) REC/PB mode

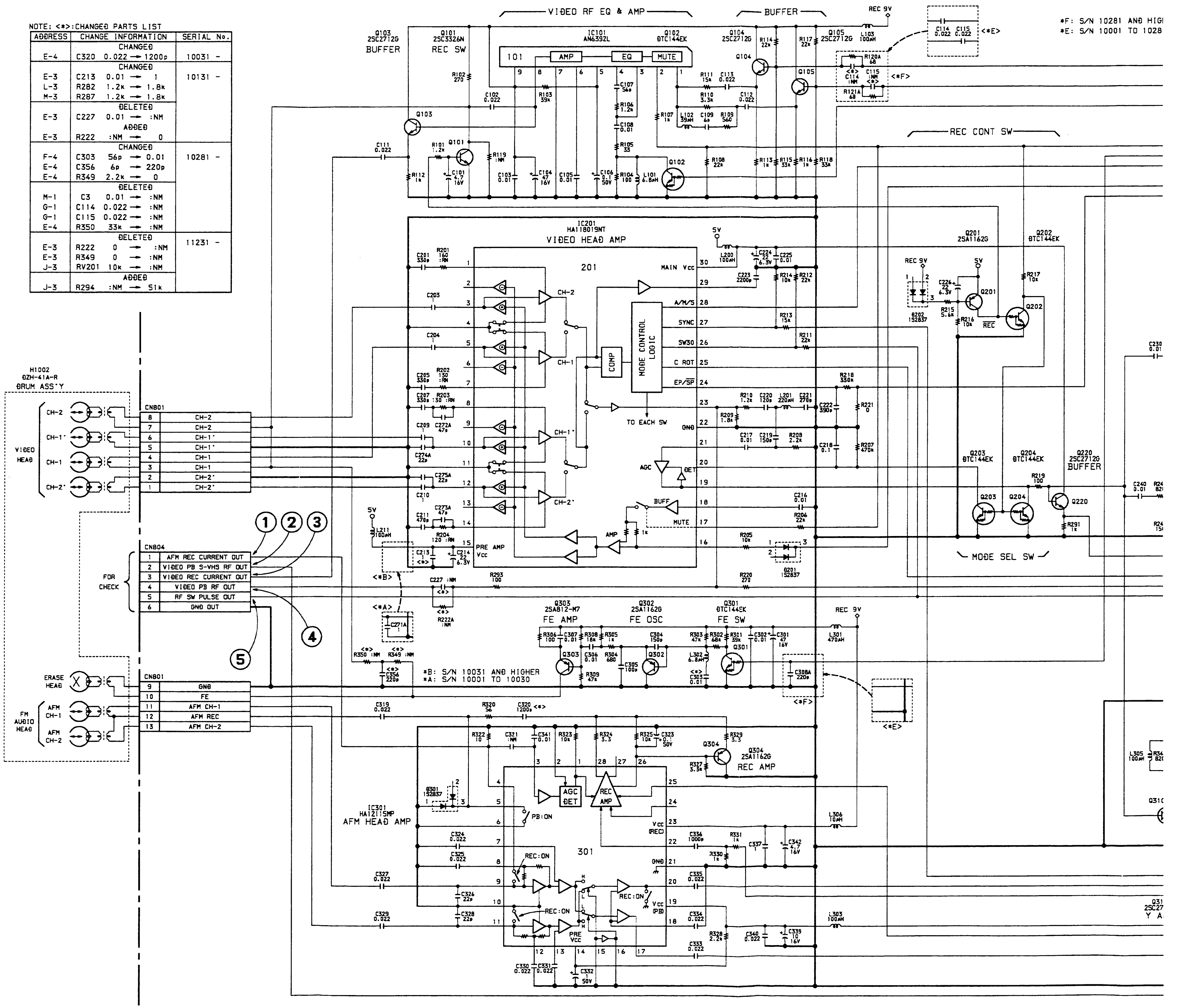


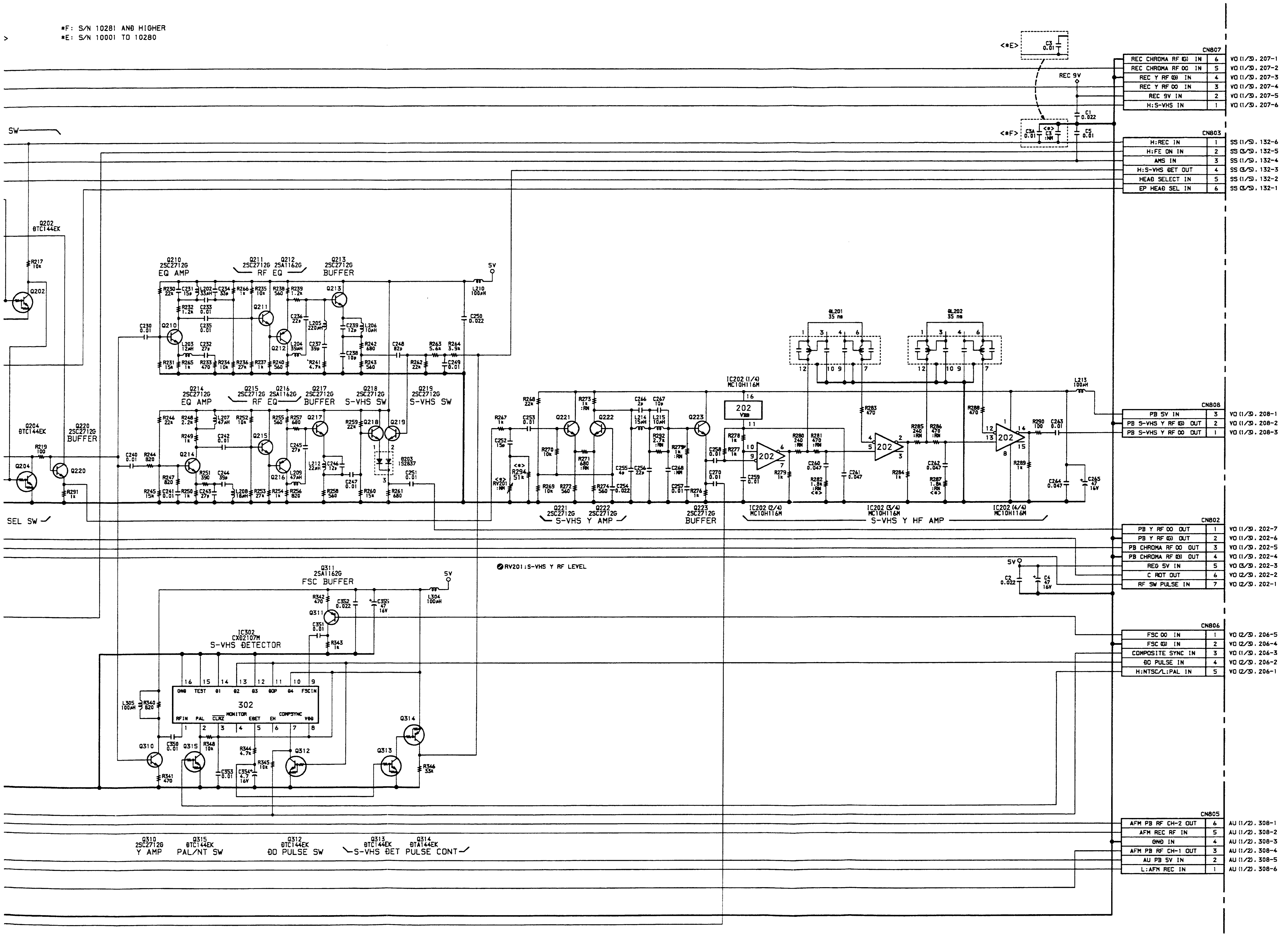
Measurement Condition

S-VIDEO IN : 75% color bars
REC mode : S-VHS
PB mode (S) : KRV-45HPS
PB mode (N) : KRV-44PS

NOTE: <*>:CHANGED PARTS LIST

ADDRESS	CHANGE INFORMATION	SERIAL No.
	CHANGED	
E-4	C320 0.022 → 1200p	10031 -
	CHANGED	
E-3	C213 0.01 → 1	10131 -
L-3	R282 1.2k → 1.8k	
M-3	R287 1.2k → 1.8k	
	DELETED	
E-3	C227 0.01 → :NM	
	ADDED	
E-3	R222 :NM → 0	
	CHANGED	
F-4	C303 56p → 0.01	10281 -
E-4	C356 6p → 220p	
E-4	R349 2.2k → 0	
	DELETED	
M-1	C3 0.01 → :NM	
G-1	C114 0.022 → :NM	
G-1	C115 0.022 → :NM	
E-4	R350 33k → :NM	
	DELETED	
E-3	R222 0 → :NM	11231 -
E-3	R349 0 → :NM	
J-3	RV201 10k → :NM	
	ADDED	
J-3	R294 :NM → 51k	


VIDEO RF EQ & AMP
BUFFER
REC 9V
*F: S/N 10281 AND HIGH
*E: S/N 10001 TO 1028
Q103 2SC2712G BUFFER
Q101 2SC3326N REC SW
IC101 AN6392L
Q102 DTC144EK
Q104 2SC2712G
Q105 2SC2712G
L103 100μH
101
AMP
EQ
MUTE
REC CONT SW
IC201 HA11801PNT
VIDEO HEAD AMP
201
MAIN Vcc
A/M/S
SYNC
SW30
C ROT
EP/SP
GND
TO EACH SW
AGC
DET
BUFF
MUTE
AMP
PRE AMP Vcc
MODE CONTROL LOGIC
COMP
CH-1
CH-2
CH-1'
CH-2'
Q201 2SA1162G
Q202 DTC144EK
Q203 DTC144EK
Q204 DTC144EK
Q220 2SC2712G BUFFER
MODE SEL SW
D202 1SS237
D201 1SS237
H1002 DZH-41A-R DRUM ASS'Y
VIDEO HEAD
ERASE HEAD
FM AUDIO HEAD
AFM CH-1
AFM CH-2
CN801
CH-2
CH-1'
CH-1
CH-2'
CN804
FOR CHECK
1 AFM REC CURRENT OUT
2 VIDEO PB S-VHS RF OUT
3 VIDEO REC CURRENT OUT
4 VIDEO PB RF OUT
5 RF SW PULSE OUT
6 GND OUT
9 GND
10 FE
11 AFM CH-1
12 AFM REC
13 AFM CH-2
① ② ③ ④ ⑤
Q303 2SA812-M7 FE AMP
Q302 2SA1162G FE OSC
Q301 DTC144EK FE SW
*B: S/N 10031 AND HIGHER
*A: S/N 10001 TO 10030
IC301 HA12115MP AFM HEAD AMP
301
AGC DET
REC AMP
PB:ON
REC:ON
PRE Vcc
Vcc (REC)
Vcc (PB)
Q304 2SA1162G REC AMP
D301 1SS237
5V
REC 9V


*F: S/N 10281 AND HIGHER
*E: S/N 10001 TO 10280
SW
SEL SW
Q202 DTC144EK
Q204 DTC144EK
Q220 2SC2712G BUFFER
Q210 2SC2712G EQ AMP
Q211 2SC2712G Q212 2SA1162G RF EQ
Q213 2SC2712G BUFFER
Q214 2SC2712G EQ AMP
Q215 2SC2712G Q216 2SA1162G RF EQ
Q217 2SC2712G BUFFER
Q218 2SC2712G S-VHS SW
Q219 2SC2712G S-VHS SW
D203 1SS357
Q221 2SC2712G Q222 2SC2712G S-VHS Y AMP
Q223 2SC2712G BUFFER
IC202 (1/4) MC10H116M
IC202 (2/4) MC10H116M
IC202 (3/4) MC10H116M
IC202 (4/4) MC10H116M
S-VHS Y HF AMP
DL201 35 ns
DL202 35 ns
L213 100μH
RV201 :S-VHS Y RF LEVEL
Q311 2SA1162G FSC BUFFER
IC302 CXD2107M S-VHS DETECTOR
302
GND TEST D1 D2 D3 DOP D4 FSCIN
RFIN PAL CLRZ MONITOR EDET EN COMPSYNC VDD
Q310 2SC2712G Y AMP
Q315 DTC144EK PAL/NT SW
Q312 DTC144EK DO PULSE SW
Q313 DTC144EK Q314 DTA144EK S-VHS DET PULSE CONT
5V
REC 9V
<*E> C3 0.01
<*F> C3A 0.01 <*> C3 :NM
C1 0.022
C5 0.01
C2 0.022
C4 47 16V
CN807
REC CHROMA RF (G) IN 6 VO (1/3). 207-1
REC CHROMA RF (X) IN 5 VO (1/3). 207-2
REC Y RF (G) IN 4 VO (1/3). 207-3
REC Y RF (X) IN 3 VO (1/3). 207-4
REC 9V IN 2 VO (1/3). 207-5
H:S-VHS IN 1 VO (1/3). 207-6
CN803
H:REC IN 1 SS (1/5). 132-6
H:FE ON IN 2 SS (3/5). 132-5
AMS IN 3 SS (1/5). 132-4
H:S-VHS DET OUT 4 SS (3/5). 132-3
HEAD SELECT IN 5 SS (1/5). 132-2
EP HEAD SEL IN 6 SS (3/5). 132-1
CN808
PB 5V IN 3 VO (1/3). 208-1
PB S-VHS Y RF (G) OUT 2 VO (1/3). 208-2
PB S-VHS Y RF (X) OUT 1 VO (1/3). 208-3
CN802
PB Y RF (X) OUT 1 VO (1/3). 202-7
PB Y RF (G) OUT 2 VO (1/3). 202-6
PB CHROMA RF (X) OUT 3 VO (1/3). 202-5
PB CHROMA RF (G) OUT 4 VO (1/3). 202-4
REG 5V IN 5 VO (3/3). 202-3
C ROT OUT 6 VO (2/3). 202-2
RF SW PULSE IN 7 VO (2/3). 202-1
CN806
FSC (X) IN 1 VO (2/3). 206-5
FSC (G) IN 2 VO (2/3). 206-4
COMPOSITE SYNC IN 3 VO (1/3). 206-3
DO PULSE IN 4 VO (2/3). 206-2
H:NTSC/L:PAL IN 5 VO (2/3). 206-1
CN805
AFM PB RF CH-2 OUT 6 AU (1/2). 308-1
AFM REC RF IN 5 AU (1/2). 308-2
GND IN 4 AU (1/2). 308-3
AFM PB RF CH-1 OUT 3 AU (1/2). 308-4
AU PB 5V IN 2 AU (1/2). 308-5
L:AFM REC IN 1 AU (1/2). 308-6

1
2
3
4
5

RP-62A

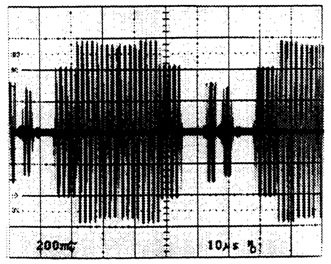
1-641-587-12, 13 (2)
SVO-9500MDP

13-3 13-3

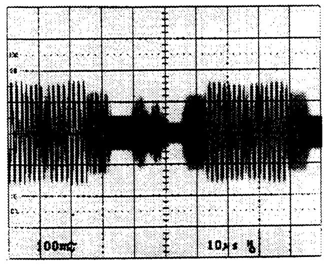
H | I | J | K | L | M | N | O | P

CR-39 (1/3); CHROMA PROCESSOR

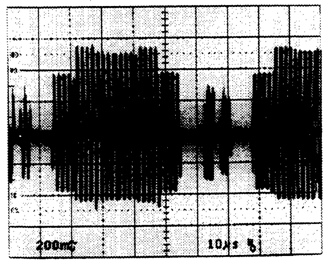
① TP607 (E-3∗) STOP (E-E) mode



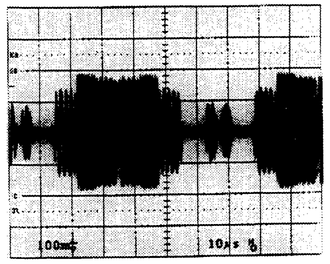
TP607 (E-3∗) PB mode



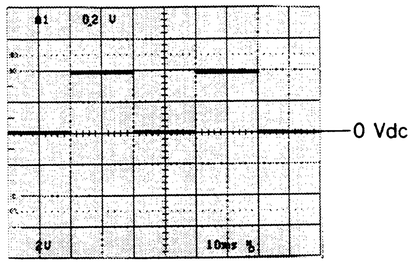
② TP601 (F-3∗) STOP (E-E) mode



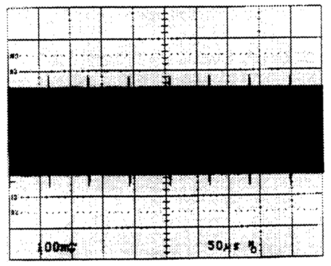
TP601 (F-3∗) PB mode



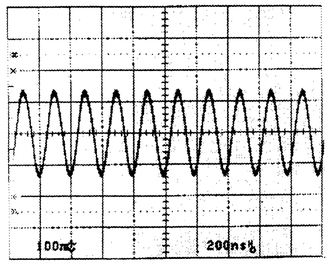
③ TP610 (G-3∗) REC/PB mode



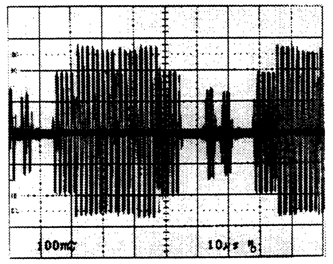
④ TP608 (D-3∗)



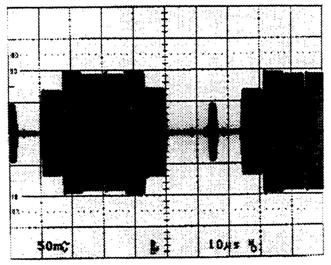
TP608 (D-3∗) (fsc part)



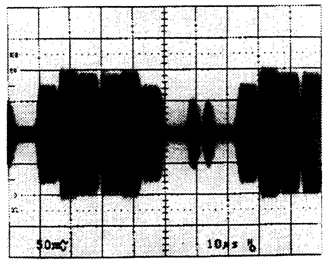
⑤ TP603 (G-3∗) STOP (E-E) mode



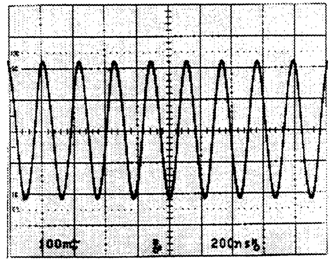
⑥ TP605 (F-3∗) STOP (E-E) mode



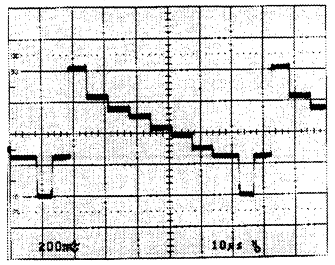
TP605 (F-3∗) PB mode



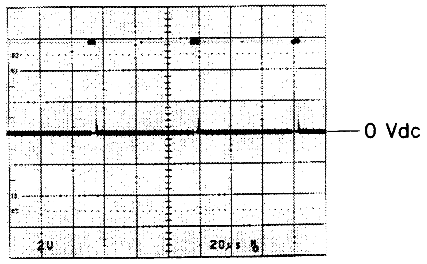
⑦ TP602 (F-2∗)



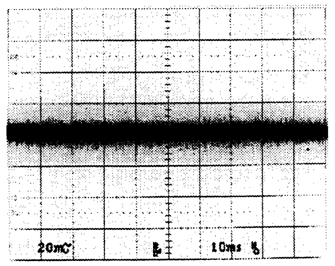
⑧ CN212 pin 18 (H-2∗)
STOP (E-E) mode



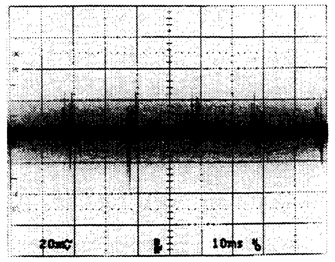
⑨ IC604 pin 4 (A-2∗)



⑩ TP606 (E-2∗) STOP (E-E) mode



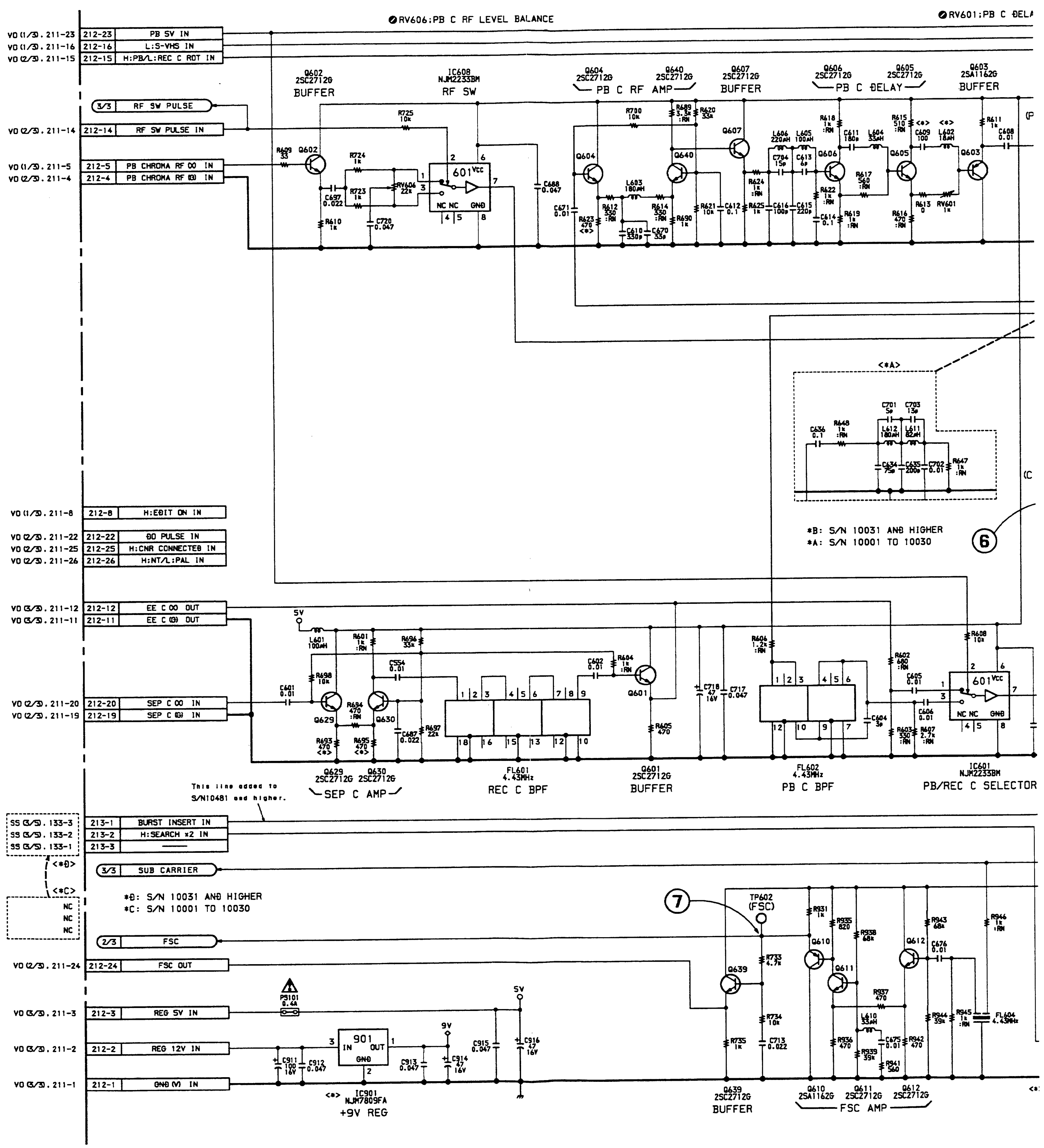
TP606 (E-2∗) PB mode

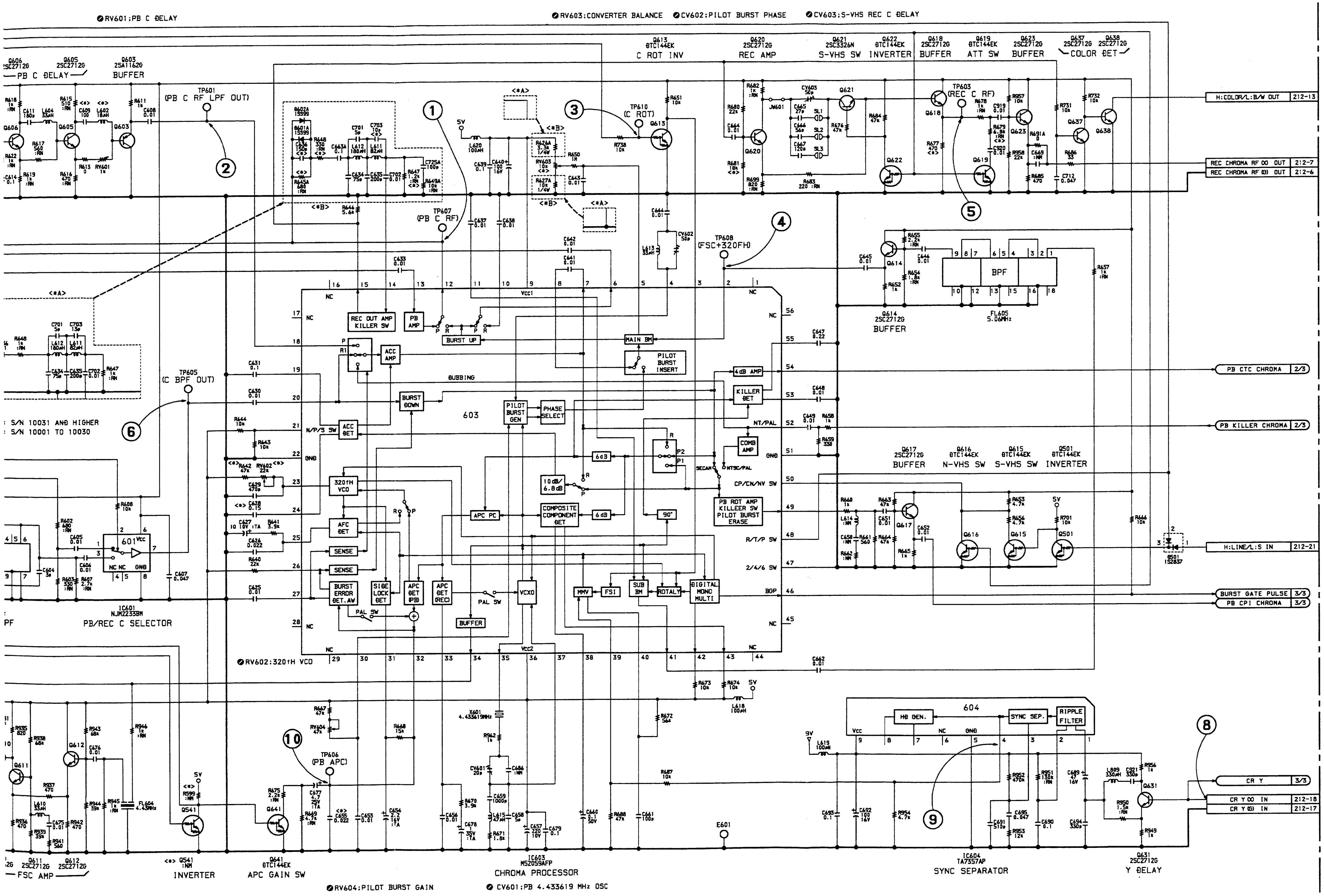


Measurement Condition
S-VIDEO IN: 75% color bars
STOP (E-E) mode: S-VHS
REC mode: S-VHS
PB mode: KRV-45HPS

∗ mark; B SIDE mount

NOTE:
The ⚠-marked components are critical to safety.
Replace only with same components as specified.


RV606:PB C RF LEVEL BALANCE
RV601:PB C DELA
VO (1/3). 211-23
212-23
PB SV IN
VO (1/3). 211-16
212-16
L:S-VHS IN
VO (2/3). 211-15
212-15
H:PB/L:REC C ROT IN
3/3
RF SW PULSE
VO (2/3). 211-14
212-14
RF SW PULSE IN
VO (1/3). 211-5
212-5
PB CHROMA RF (X) IN
VO (2/3). 211-4
212-4
PB CHROMA RF (G) IN
Q602
2SC2712G
BUFFER
IC608
NJM2233BM
RF SW
R609 33
R725 10k
R724 1k
R723 1k
RV606 22k
C697 0.022
R610 1k
C720 0.047
601 Vcc
NC NC GND
C688 0.047
C671 0.01
Q604
2SC2712G
Q640
2SC2712G
PB C RF AMP
Q607
2SC2712G
BUFFER
Q606
2SC2712G
Q605
2SC2712G
PB C DELAY
Q603
2SA1162G
BUFFER
R700 10k
R689 3.3k :RN
R620 33k
L603 180μH
R612 330 :RN
R614 330 :RN
R623 470 <*>
C610 330p
C670 33p
R690 1k
R621 10k
C612 0.1
L606 220μH
L605 100μH
C704 15p
C613 6p
R624 1k :RN
R625 1k
C616 100p
C615 220p
R622 1k :RN
C614 0.1
R619 1k :RN
R618 1k :RN
C611 180p
L604 33μH
R617 560 :RN
R615 510 :RN
<*>
C609 100
L602 18μH
R616 470 :RN
R613 0
RV601 1k
R611 1k
C608 0.01
<*A>
C701 5p
C703 15p
C636 0.1
R648 1k :RN
L612 180μH
L611 82μH
C634 75p
C635 200p
C702 0.01
R647 1k :RN
*B: S/N 10031 AND HIGHER
*A: S/N 10001 TO 10030
⑥
VO (1/3). 211-8
212-8
H:EDIT ON IN
VO (2/3). 211-22
212-22
DO PULSE IN
VO (2/3). 211-25
212-25
H:CNR CONNECTED IN
VO (2/3). 211-26
212-26
H:NT/L:PAL IN
VO (3/3). 211-12
212-12
EE C (X) OUT
VO (3/3). 211-11
212-11
EE C (G) OUT
VO (2/3). 211-20
212-20
SEP C (X) IN
VO (2/3). 211-19
212-19
SEP C (G) IN
5V
L601 100μH
R601 1k :RN
R696 33k
C554 0.01
R698 10k
C601 0.01
R694 470 :RN
R693 470 <*>
R695 470 <*>
C687 0.022
R697 22k
Q629
Q630
Q629 2SC2712G
Q630 2SC2712G
SEP C AMP
FL601
4.43MHz
REC C BPF
C602 0.01
R604 1k :RN
Q601
R605 470
Q601
2SC2712G
BUFFER
C718 47 16V
C717 0.047
R606 1.2k :RN
FL602
4.43MHz
PB C BPF
C604 3p
R602 680 :RN
R603 330 :RN
R607 2.7k :RN
C605 0.01
C606 0.01
R608 10k
IC601
NJM2233BM
PB/REC C SELECTOR
This line added to
S/N10481 and higher.
SS (3/5). 133-3
SS (3/5). 133-2
SS (3/5). 133-1
213-1
BURST INSERT IN
213-2
H:SEARCH ×2 IN
213-3
<*B>
<*C>
NC
NC
NC
3/3
SUB CARRIER
*B: S/N 10031 AND HIGHER
*C: S/N 10001 TO 10030
2/3
FSC
VO (2/3). 211-24
212-24
FSC OUT
PS101
0.4A
VO (3/3). 211-3
212-3
REG 5V IN
VO (3/3). 211-2
212-2
REG 12V IN
VO (3/3). 211-1
212-1
GND (V) IN
C911 100 16V
C912 0.047
901
IN OUT
GND
<*>
IC901
NJM7809FA
+9V REG
9V
C913 0.047
C914 47 16V
C915 0.047
C916 47 16V
5V
⑦
TP602
(FSC)
R733 4.7k
R734 10k
R735 1k
C713 0.022
Q639
Q639
2SC2712G
BUFFER
R931 1k
R935 820
R938 68k
R937 470
R936 470
L610 33μH
R939 39k
C675 0.01
R941 560
R942 470
R943 68k
C676 0.01
R944 39k
R945 1k :RN
R946 1k :RN
FL604
4.43MHz
Q610
Q611
Q612
Q610 2SA1162G
Q611 2SC2712G
Q612 2SC2712G
FSC AMP


RV601:PB C DELAY
RV603:CONVERTER BALANCE
CV602:PILOT BURST PHASE
CV603:S-VHS REC C DELAY
Q606 2SC2712G
Q605 2SC2712G
PB C DELAY
Q603 2SA1162G
BUFFER
TP601 (PB C RF LPF OUT)
Q613 DTC144EK
C ROT INV
TP610 (C ROT)
Q620 2SC2712G
REC AMP
Q621 2SC3326N
S-VHS SW
Q622 DTC144EK
INVERTER
Q618 2SC2712G
BUFFER
Q619 DTC144EK
ATT SW
Q623 2SC2712G
BUFFER
Q637 2SC2712G
Q638 2SC2712G
COLOR DET
TP603 (REC C RF)
TP607 (PB C RF)
TP608 (FSC+320FH)
TP605 (C BPF OUT)
Q614 2SC2712G
BUFFER
BPF
FL605 5.06MHz
603
REC OUT AMP KILLER SW
PB AMP
BURST UP
MAIN BM
ACC AMP
PILOT BURST INSERT
DUBBING
BURST DOWN
PILOT BURST GEN
PHASE SELECT
4dB AMP
KILLER DET
ACC DET
N/P/S SW
COMB AMP
SECAM
NTSC/PAL
6dB
10dB/6.8dB
320fH VCO
AFC DET
APC PC
COMPOSITE COMPONENT DET
90°
PB ROT AMP KILLER SW PILOT BURST ERASE
SENSE
BURST ERROR DET.AW
SIDE LOCK DET
APC DET (PB)
APC DET (REC)
PAL SW
VCXO
MMV
FSI
SUB BM
ROTALY
DIGITAL MONO MULTI
BUFFER
Vcc1
Vcc2
NC
GND
CP/CN/NV SW
R/T/P SW
2/4/6 SW
BGP
NT/PAL
S/N 10031 AND HIGHER
S/N 10001 TO 10030
IC601 NJM2233BM
PB/REC C SELECTOR
RV602:320fH VCO
Q617 2SC2712G
BUFFER
Q616 DTC144EK
N-VHS SW
Q615 DTC144EK
S-VHS SW
Q501 DTC144EK
INVERTER
H:COLOR/L:B/W OUT 212-13
REC CHROMA RF (X) OUT 212-7
REC CHROMA RF (G) OUT 212-6
PB CTC CHROMA 2/3
PB KILLER CHROMA 2/3
H:LINE/L:S IN 212-21
D501 1SS237
BURST GATE PULSE 3/3
PB CPI CHROMA 3/3
VO (2/3).211-13
VO (1/3).211-7
VO (1/3).211-6
VO (2/3).211-21
604
H0 GEN.
SYNC SEP.
RIPPLE FILTER
TP606 (PB APC)
X601 4.433619MHz
E601
CR Y 3/3
CR Y (X) IN 212-18
CR Y (G) IN 212-17
VO (2/3).211-18
VO (2/3).211-17
Q611 2SC2712G
Q612 2SC2712G
FSC AMP
Q541 :NM
INVERTER
Q641 DTC144EK
APC GAIN SW
IC603 M52055AFP
CHROMA PROCESSOR
IC604 TA7357AP
SYNC SEPARATOR
Q631 2SC2712G
Y DELAY
RV604:PILOT BURST GAIN
CV601:PB 4.433619 MHz OSC
FL604 4.43MHz
L618 100uH
L619 100uH
5V
9V

NOTE: <*>:CHANGED PARTS LIST

ADDRESS	CHANGE INFORMATION	SERIAL No.
	CHANGED	
J-1	C636 0.1 → 150p	10031 -
J-1	C703 13p → 10p	
G-2	R623 1k → 470	
J-2	R647 1k → 1.2k	
J-1	R648 1k → 680	
M-2	R677 1k → 470	
M-1	R679 3.3k → 6.8k	
L-2	R681 22k → 18k	
F-4	R693 1k → 470	
F-4	R695 1k → 470	
K-2	RV603 22k → 10k	
	CHANGED	
I-3	C628 0.1 → 0.15	10281 -
J-5	C655 0.01 → 0.022	
	CHANGED	
J-1	R645A 330 → 680	10481 -
J-1	R648 680 → 330	
I-5	Q541 DTC144EK → :NM	
I-5	R599 10K → :NM	
F-5	IC901 RC7809FA → NJM7809FA	
	CHANGED	
H-1	C609 56p → 100p	10631 -
I-1	L602 15uH → 18uH	
	CHANGED	
I-3	R642 39k → 47k	13851 -
I-3	RV602 47k → 22k	

CR-39 (1/3)

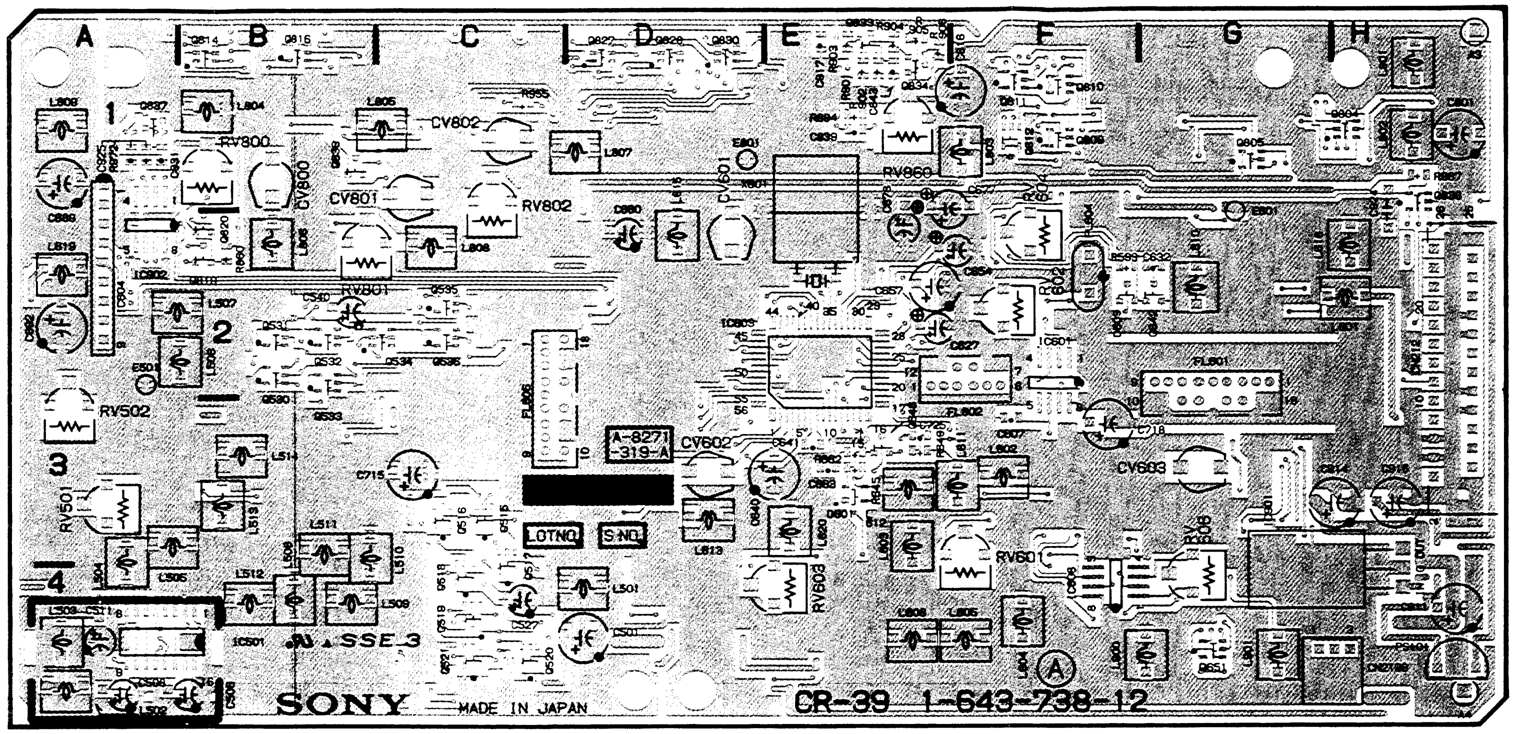
1-643-738-11, 12 (2)
SVO-9500MDP

CR-39; CHROMA PROCESS S/N 15191 and higher (EK)

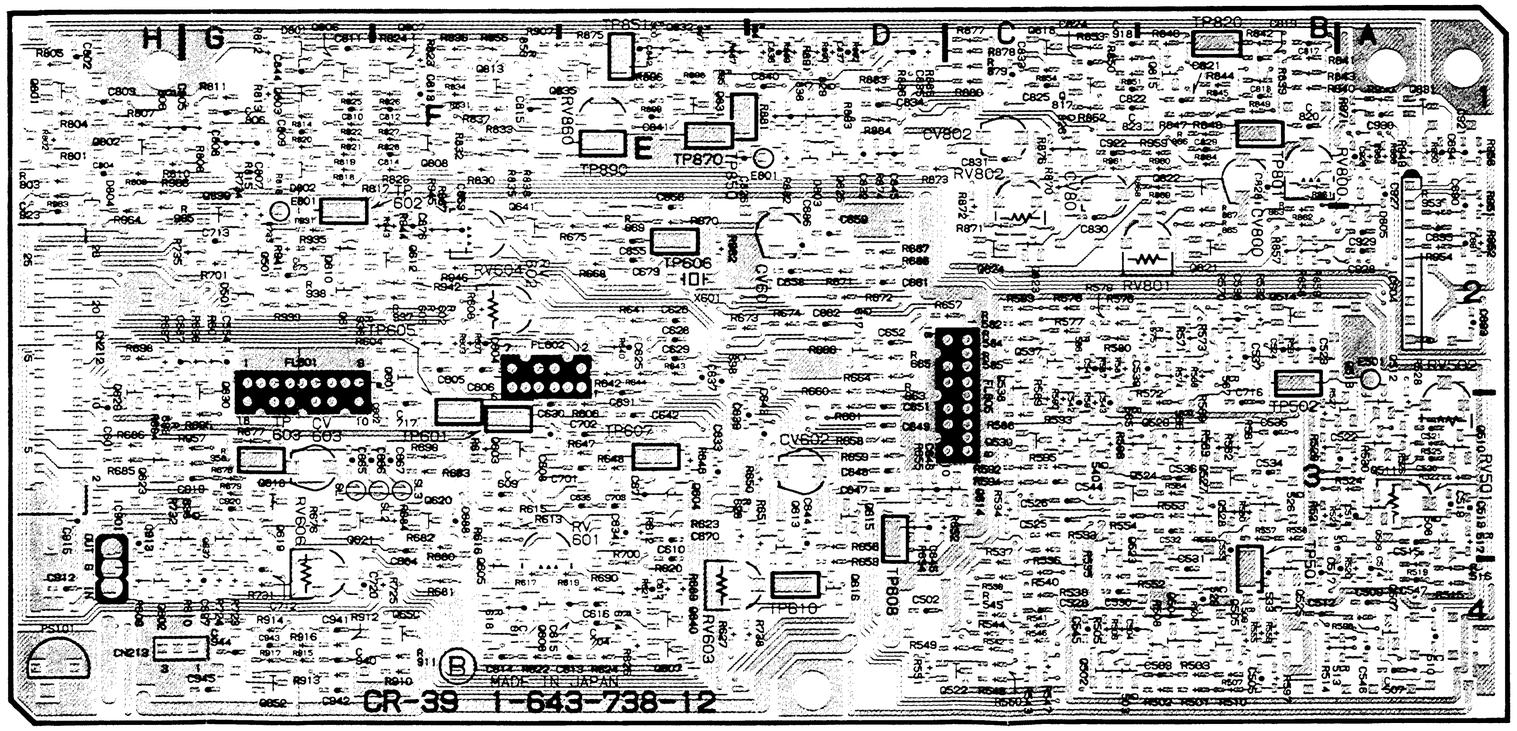
CR-39 (1-643-738-12)

CN212	H-2	Q533	B-2	Q829	D-1 *
CN213	H-4	Q534	C-2	Q830	D-1
		Q535	C-2	Q831	E-1 *
CV601	D-2	Q536	C-2	Q832	E-1 *
CV602	D-3	Q537	C-2 *	Q833	E-1
CV603	G-3	Q538	C-2 *	Q834	E-1
CV800	B-1	Q539	C-3 *	Q835	E-1 *
CV801	C-1	Q540	C-3 *	Q836	B-1
CV802	C-1	Q601	F-2 *	Q837	A-1
		Q602	H-4 *	Q838	H-1
D501	G-2 *	Q603	F-3 *		
D601	E-3	Q604	E-3 *	RV501	A-3
D603	F-2	Q605	F-4 *	RV502	A-2
D801	G-1 *	Q606	F-4 *	RV601	F-3
D802	G-1 *	Q607	E-4 *	RV602	F-2
D803	D-1 *	Q610	G-2 *	RV603	D-4
D804	H-1 *	Q611	G-2 *	RV604	F-2
D805	A-1 *	Q612	F-2 *	RV606	G-4
		Q613	D-3 *	RV800	B-1
E501	A-2	Q614	C-3 *	RV801	B-2
E601	G-2	Q615	D-3 *	RV802	C-1
E801	D-1	Q616	D-4 *	RV860	E-1
		Q617	D-2 *		
FL601	G-2	Q618	G-3 *	TP501	B-4 *
FL602	F-2	Q619	G-3 *	TP502	B-2 *
FL604	F-2	Q620	F-3 *	TP601	F-3 *
FL605	C-2	Q621	G-3 *	TP602	G-2 *
		Q623	H-3 *	TP603	G-3 *
IC501	B-4	Q629	H-2 *	TP605	F-3 *
IC601	F-2	Q630	G-2 *	TP606	E-2 *
IC603	E-2	Q631	A-1 *	TP607	E-3 *
IC604	A-1	Q637	G-3 *	TP608	D-3 *
IC608	F-4	Q638	G-3 *	TP610	D-4 *
IC901	H-4	Q639	G-2 *	TP801	B-1 *
IC902	A-1	Q640	E-4 *	TP820	B-1 *
		Q641	F-2 *	TP850	E-1 *
PS101	H-4	Q642	G-2	TP851	E-1 *
		Q648	E-3	TP870	E-1 *
Q501	G-2 *	Q650	F-4 *	TP890	E-1 *
Q502	C-4 *	Q651	G-4		
Q503	C-4 *	Q652	G-4 *	X601	E-2
Q504	B-4 *	Q801	H-1 *		
Q505	B-4 *	Q802	H-1 *		
Q507	A-4 *	Q803	G-1 *		
Q508	A-3 *	Q804	H-1		
Q509	A-3 *	Q805	G-1		
Q510	A-3 *	Q806	G-1 *		
Q511	A-3 *	Q807	F-1 *		
Q512	A-3 *	Q808	F-1 *		
Q513	A-3 *	Q809	F-1		
Q514	B-2 *	Q810	F-1		
Q515	C-3	Q811	F-1		
Q516	C-3	Q812	F-1		
Q517	C-3	Q813	F-1 *		
Q518	C-4	Q814	B-1		
Q519	C-4	Q815	B-1 *		
Q520	C-4	Q816	B-1		
Q521	C-4	Q817	C-1 *		
Q522	C-4 *	Q818	C-1 *		
Q523	C-3 *	Q819	B-2		
Q524	C-3 *	Q820	B-2		
Q525	B-4 *	Q821	B-2 *		
Q526	B-3 *	Q822	B-1 *		
Q527	B-3 *	Q823	C-2 *		
Q528	B-3 *	Q824	C-2 *		
Q529	B-3 *	Q825	D-1 *		
Q530	B-2	Q826	C-1 *		
Q531	B-2	Q827	D-1		
Q532	B-2	Q828	D-1		

* mark ; B SIDE mount


A
B
C
D
E
F
G
H
1
2
3
4
CV802
RV800
CV800
CV601
RV802
RV801
RV502
RV501
CV602
CV603
RV601
RV603
RV860
A-827
-319-A
LOTNO
S-NO.
SSE-3
SONY
MADE IN JAPAN
CR-39 1-643-738-12
A

CR-39 — A SIDE —
1-643-738-12 (1)
SVO-9500MDP


H
G
F
E
D
C
B
A
1
2
3
4
TP820
TP890
TP870
TP606
TP605
TP601
TP610
TP608
TP801
CV802
RV802
RV801
CV602
RV860
X601
FL601
FL602
PS101
CN213
B
MADE IN JAPAN
CR-39 1-643-738-12

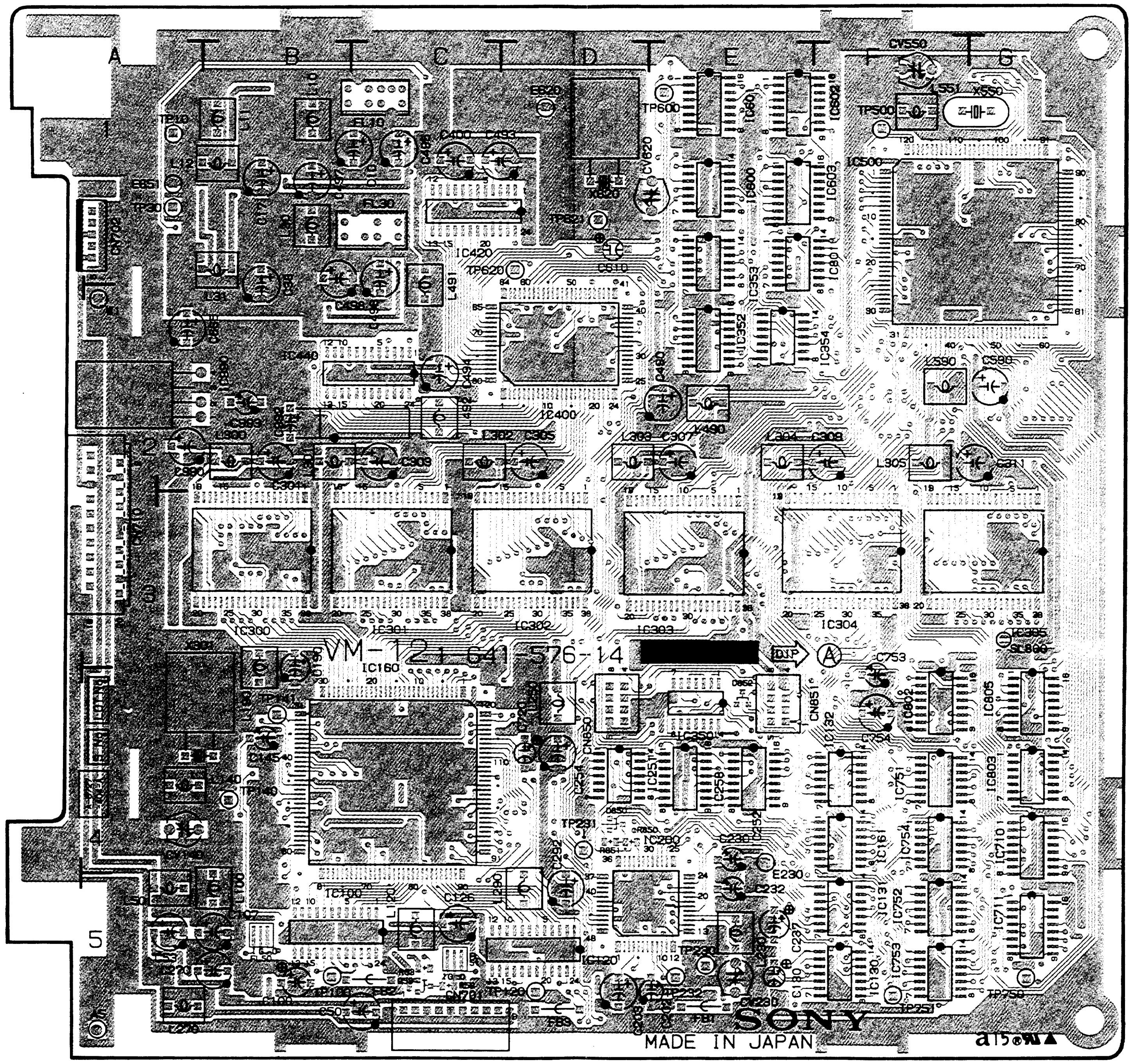
CR-39 — B SIDE —
1-643-738-12 (1)
SVO-9500MDP

VM-12P ; Y/C NOISE REDUCER, VIDEO MEMORY, CHROMA ENCODER S/N 11431 to 15190 (EK)

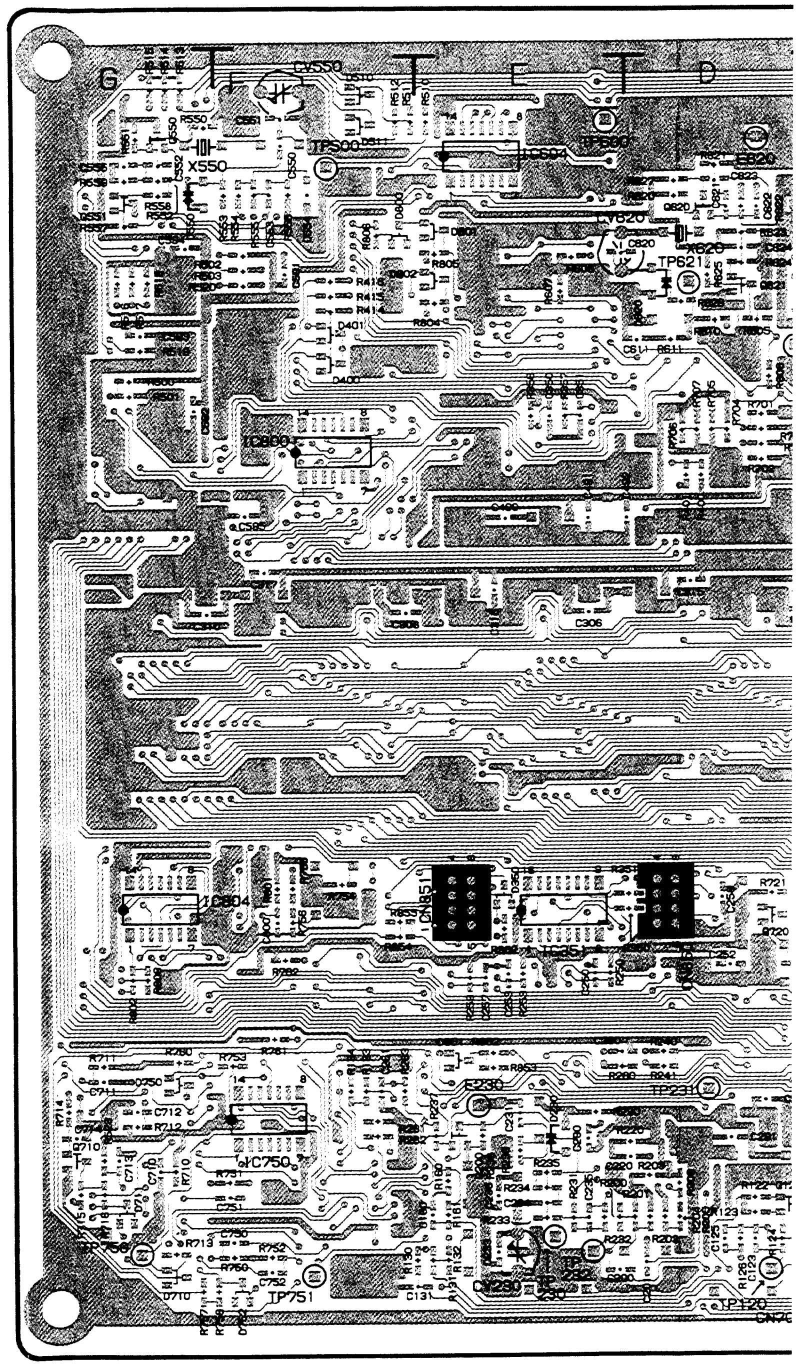
VM-12P (1-641-576-14)

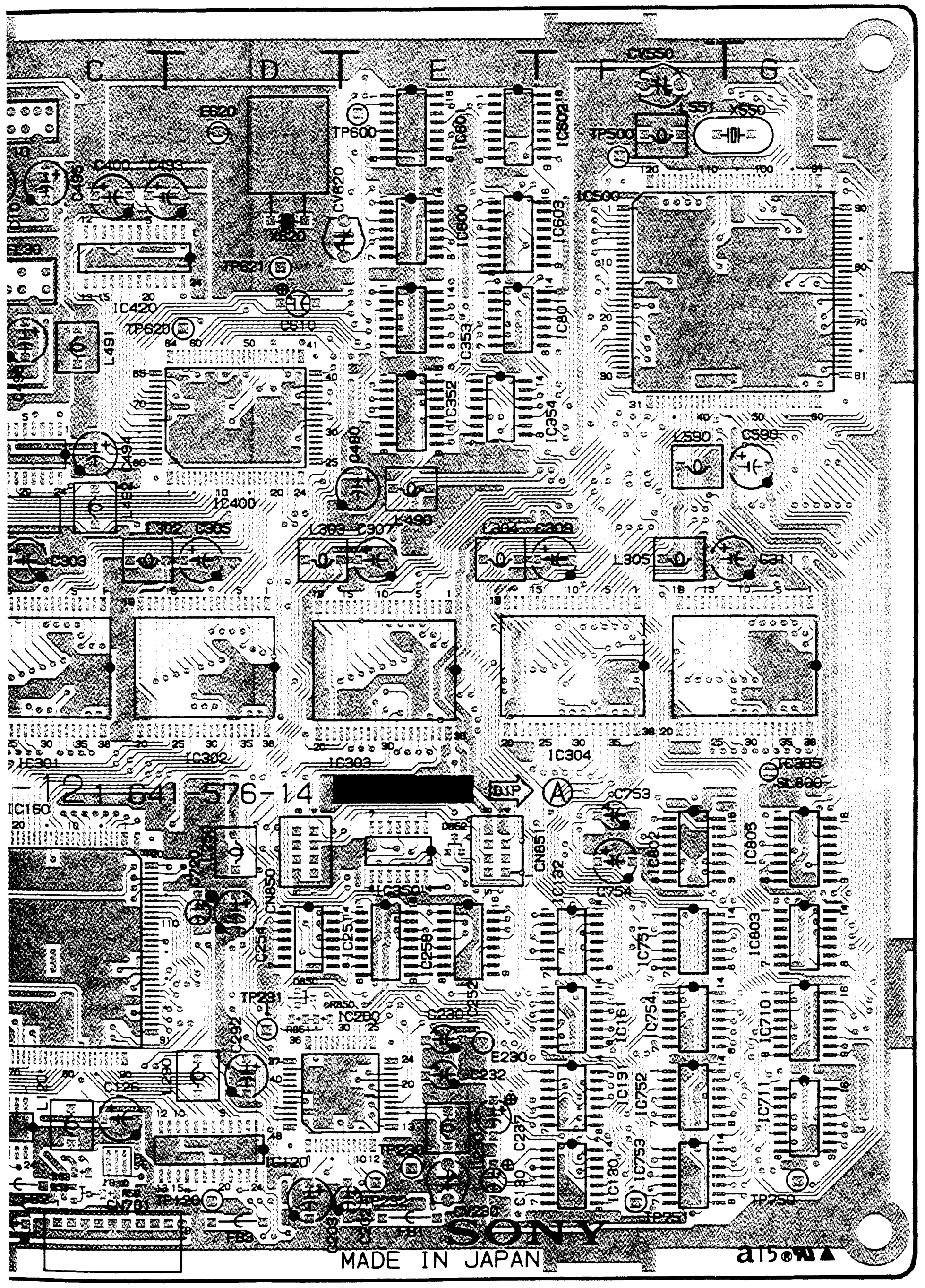
CN701	C-5
CN702	A-1
CN710	A-3
CN850	D-4
CN851	E-4
CV140	A-4
CV230	E-5
CV550	F-1
CV620	D-1
D140	B-4 *
D201	E-4 *
D230	E-5 *
D350	E-4 *
D400	E-2 *
D401	F-1 *
D510	F-1 *
D511	F-1 *
D550	G-1 *
D620	D-1 *
D710	G-5 *
D711	G-5 *
D720	D-4 *
D750	G-4 *
D752	F-5 *
D800	F-1 *
D801	E-1 *
D802	E-1 *
D850	D-4
D851	E-4 *
D852	E-4
E230	E-4
E620	D-1
E651	A-1
FL10	C-1
FL30	C-1
FL50	B-5
FL51	C-5
IC50	A-5
IC100	C-5
IC120	D-5
IC130	F-5
IC131	F-5
IC132	F-4
IC160	C-4
IC161	F-4
IC200	E-4
IC251	D-4
IC252	E-4
IC258	E-4
IC300	B-3
IC301	C-3
IC302	D-3
IC303	E-3
IC304	F-3
IC305	G-3
IC350	E-4
IC351	E-4 *
IC352	E-2
IC353	E-1
IC354	E-2
IC400	D-2
IC420	C-1
IC440	C-2
IC500	F-1
IC600	E-1
IC601	E-1
IC602	E-1
IC603	E-1
IC604	E-1 *
IC710	G-4
IC711	G-5
IC750	F-5 *
IC751	F-4
IC752	F-5
IC753	F-5
IC754	F-4
IC800	F-2 *
IC801	E-1
IC802	F-4
IC803	G-4
IC804	G-4 *
IC805	G-4
IC990	A-2
Q10	B-1 *
Q11	B-1 *
Q12	B-1 *
Q20	B-1 *
Q21	C-2 *
Q30	B-1 *
Q31	B-1 *
Q32	B-1 *
Q33	B-1 *
Q50	B-5 *
Q51	C-5 *
Q52	B-5 *
Q53	C-5 *
Q54	B-5 *
Q55	C-5 *
Q100	B-5 *
Q120	C-5 *
Q140	A-4 *
Q141	B-4 *
Q200	E-5 *
Q210	C-1 *
Q214	B-2 *
Q270	A-5 *
Q271	B-5 *
Q550	G-1 *
Q551	G-1 *
Q620	D-1 *
Q621	D-1 *
Q710	G-5 *
Q720	D-4 *
TP10	A-1
TP30	A-1
TP100	B-5
TP120	D-5
TP140	B-4
TP141	B-4
TP230	E-5
TP231	D-4
TP232	E-5
TP500	F-1
TP600	E-1
TP620	D-1
TP621	D-1
TP750	G-5
TP751	F-5
X301	A-4
X550	G-1
X620	D-1

* mark ; B SIDE mount

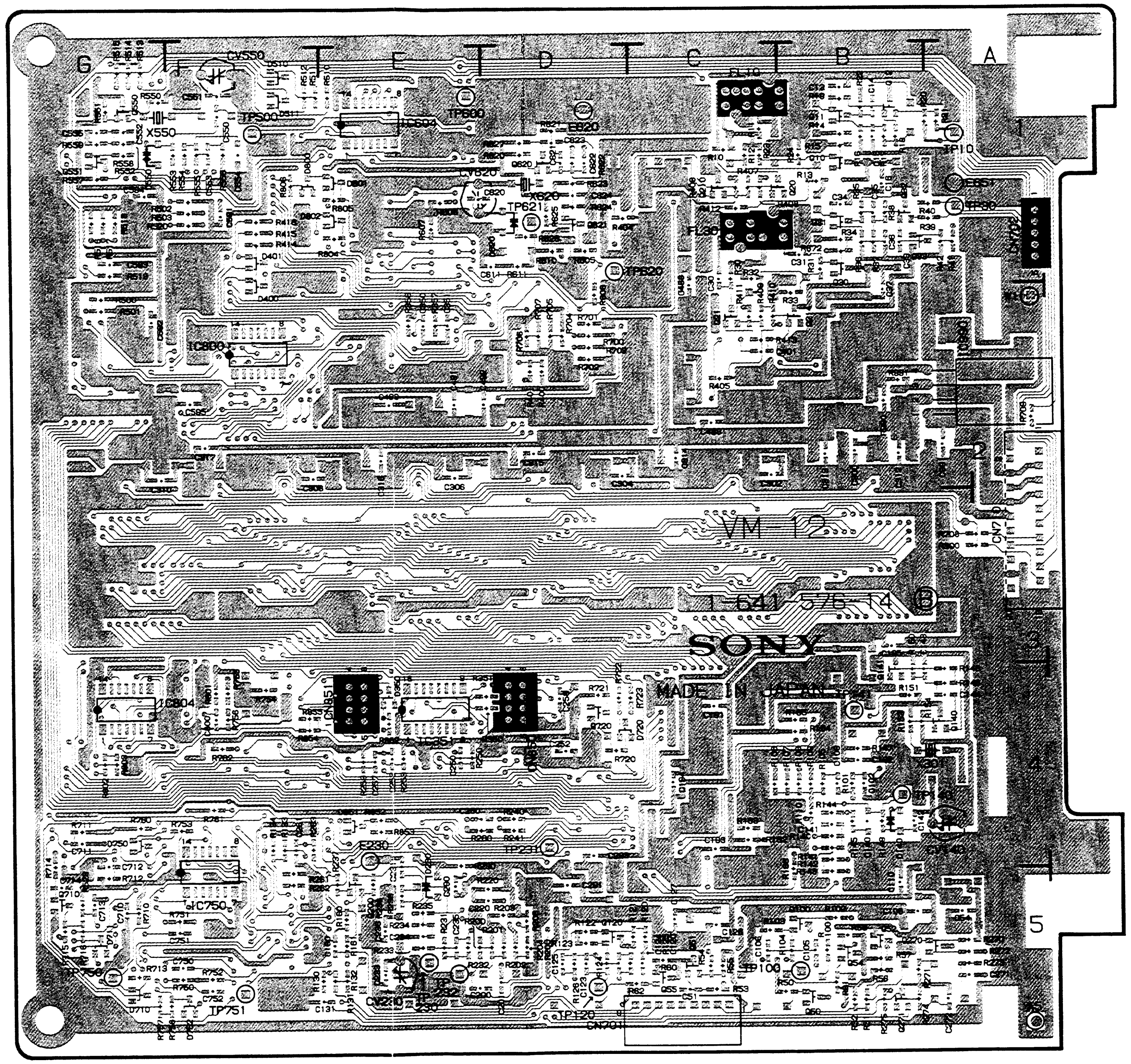

A
B
C
D
E
F
G
1
2
3
4
5
VM-12 1-641-576-14 [redacted]
IC160
IC300
IC301
IC302
IC303
IC304
IC400
IC420
IC440
IC500
CV550
X550
TP500
TP600
TP620
SONY
MADE IN JAPAN

VM-12/P – A SIDE –
1-641-576-14 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


G
F
E
D
CV550
X550
TP500
TP621
IC750
IC804


C
D
E
F
G
IC500
IC601
IC603
IC353
IC352
IC354
IC400
IC302
IC303
IC304
IC301
IC160
IC805
IC803
IC751
IC710
IC752
IC711
IC753
IC120
IC200
TP600
TP500
TP231
TP120
TP250
TP251
X550
X490
CN701
1-641-576-14
DIP
Ⓐ
SONY
MADE IN JAPAN

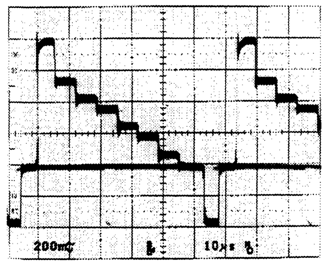
VM-12/P — A SIDE —
1-641-576-14 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


A
B
C
D
E
F
G
1
2
3
4
5
X550
TP500
TP800
TP621
TP520
TP10
TP100
TP120
TP231
TP751
TP750
IC800
IC804
IC750
CN701
VM 12
1-641-576-14 Ⓑ
SONY
MADE IN JAPAN

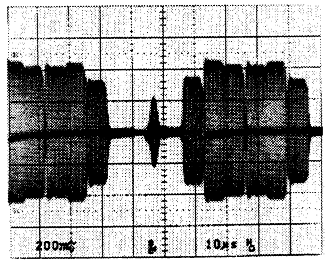
VM-12/P — B SIDE —
1-641-576-14 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

VM-12P (1/5); Y/CHROMA A-D CONVERTERS, CHROMA NOISE REDUCER S/N 11431 to 15190 (EK)

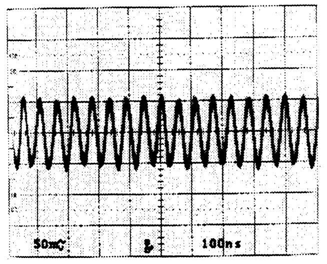
① TP100 (B-5) PB mode



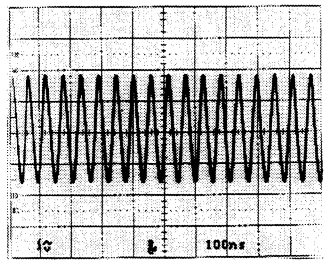
② TP120 (D-5) PB mode



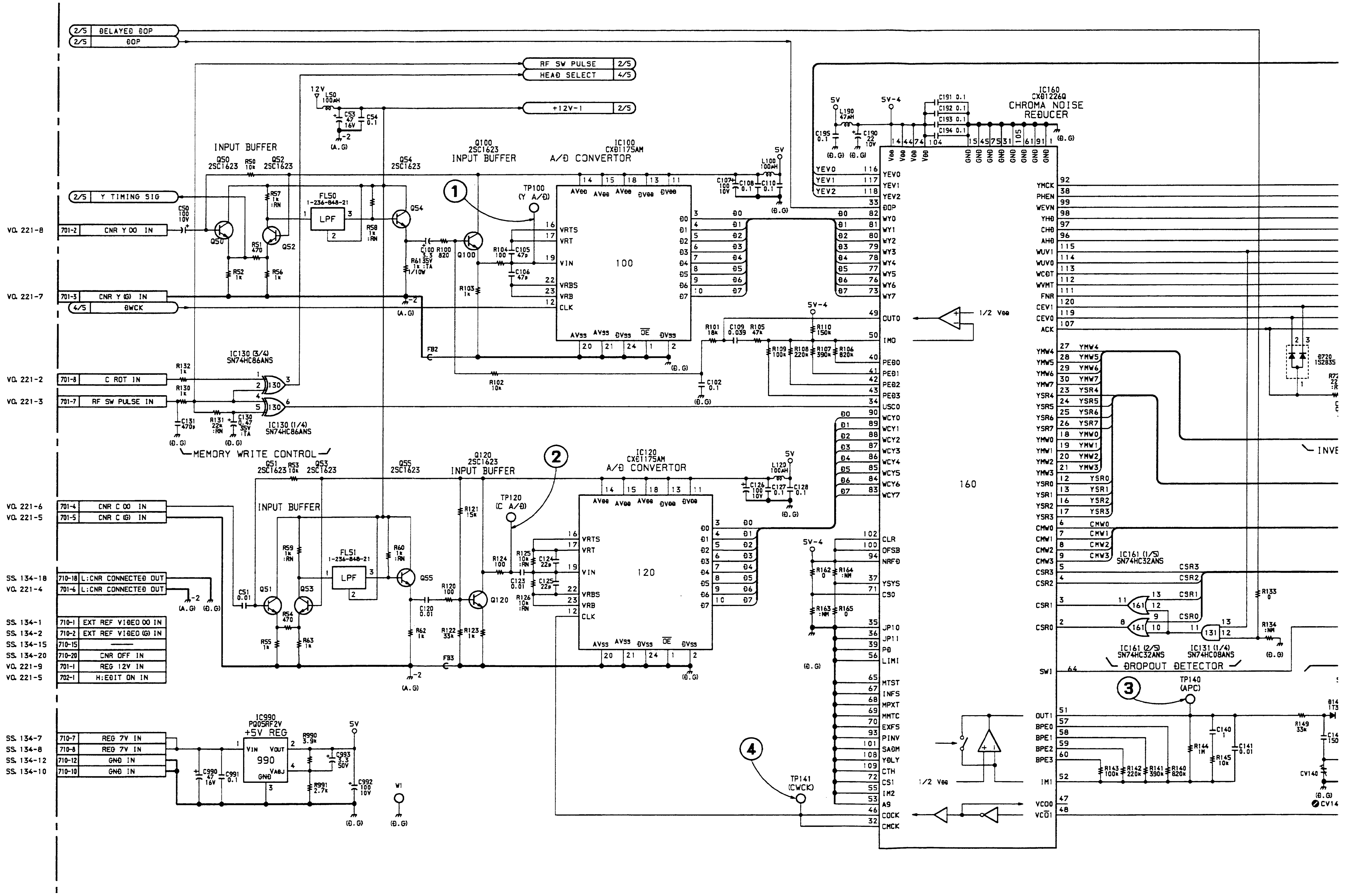
③ TP140 (B-4)

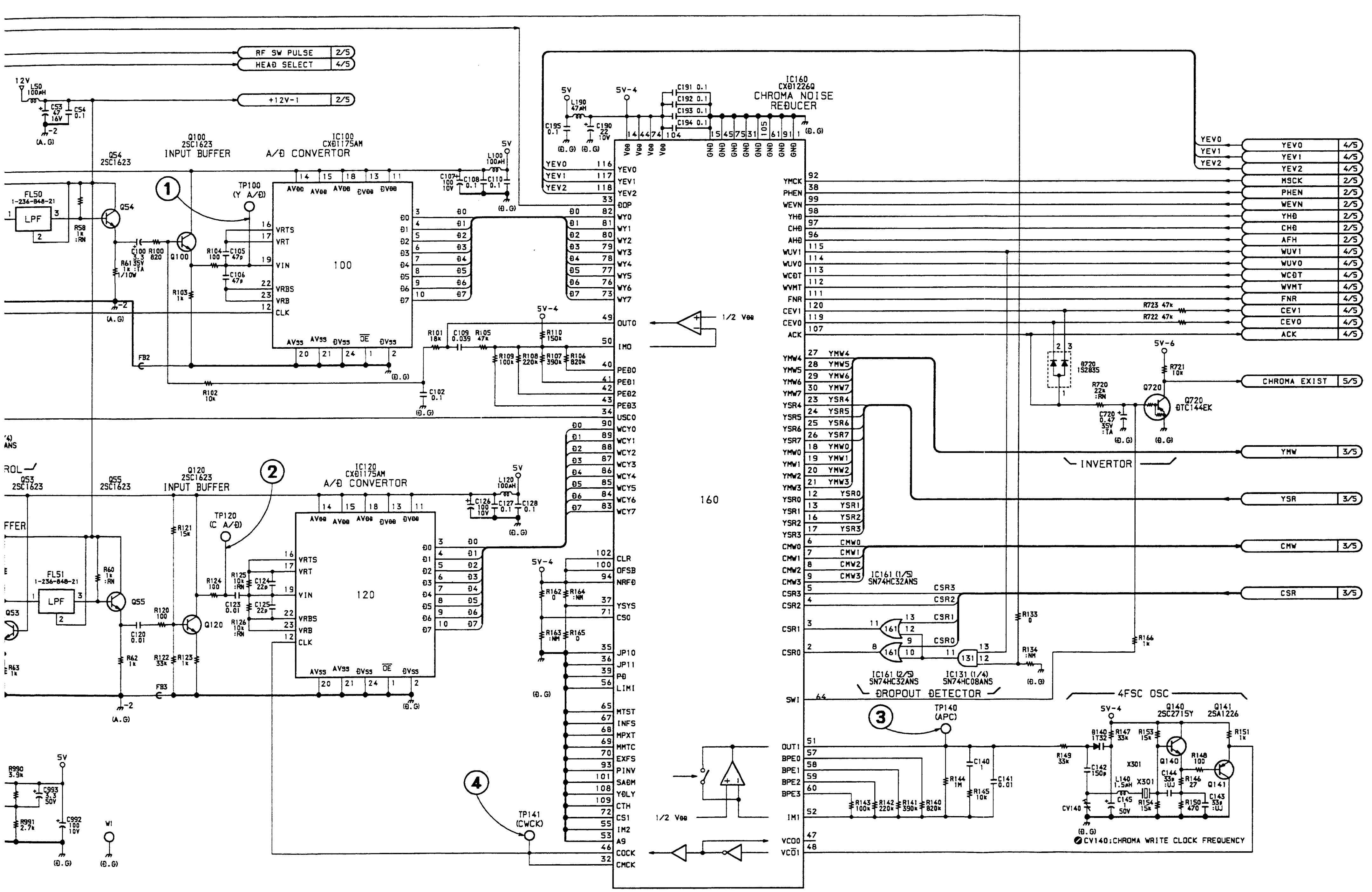


④ TP141 (B-4)



Measurement Condition
PB mode: KRV-45HPS


DELAYED BOP
BOP
RF SW PULSE
HEAD SELECT
+12V-1
Y TIMING SIG
CNR Y OO IN
CNR Y (G) IN
BWCK
C ROT IN
RF SW PULSE IN
CNR C OO IN
CNR C (G) IN
L:CNR CONNECTED OUT
EXT REF VIDEO OO IN
EXT REF VIDEO (G) IN
CNR OFF IN
REG 12V IN
H:EDIT ON IN
REG 7V IN
GND IN
INPUT BUFFER
Q50 2SC1623
Q52 2SC1623
Q54 2SC1623
Q100 2SC1623
IC100 CXD1175AM
A/D CONVERTOR
FL50 1-236-848-21
LPF
IC130 (3/4) SN74HC86ANS
IC130 (1/4) SN74HC86ANS
MEMORY WRITE CONTROL
Q51 2SC1623
Q53 2SC1623
Q55 2SC1623
Q120 2SC1623
IC120 CXD1175AM
A/D CONVERTOR
FL51 1-236-848-21
IC990 PQ05RF2V
+5V REG
TP100 (Y A/D)
TP120 (C A/D)
TP140 (APC)
TP141 (CWCK)
IC160 CXD1226Q
CHROMA NOISE REDUCER
160
IC161 (1/5) SN74HC32ANS
IC161 (2/5) SN74HC32ANS
IC131 (1/4) SN74HC08ANS
DROPOUT DETECTOR
1/2 Vee
VQ 221-8
VQ 221-7
VQ 221-2
VQ 221-3
VQ 221-6
VQ 221-5
SS 134-18
VQ 221-4
SS 134-1
SS 134-2
SS 134-15
SS 134-20
VQ 221-9
VQ 221-5
SS 134-7
SS 134-8
SS 134-12
SS 134-10
①
②
③
④


RF SW PULSE 2/5
HEAD SELECT 4/5
+12V-1 2/5
Q54 2SC1623
Q100 2SC1623 INPUT BUFFER
IC100 CX01175AM A/D CONVERTOR
TP100 (Y A/D)
①
②
TP120 (C A/D)
Q120 2SC1623 INPUT BUFFER
IC120 CX01175AM A/D CONVERTOR
Q53 2SC1623
Q55 2SC1623
FL50 1-236-848-21 LPF
FL51 1-236-848-21 LPF
IC160 CX01226Q CHROMA NOISE REDUCER
160
1/2 VDD
YEV0 YEV1 YEV2 4/5
MSCK PHEN WEVN YHD CHD AFH 2/5
WUV1 WUV0 WCOT WVMT FNR CEV1 CEV0 ACK 4/5
CHROMA EXIST 5/5
Q720 DTC144EK
D720 1S2835
INVERTOR
YMW 3/5
YSR 3/5
CMW 3/5
CSR 3/5
IC161 (1/5) SN74HC32ANS
IC161 (2/5) SN74HC32ANS
IC131 (1/4) SN74HC08ANS
DROPOUT DETECTOR
③ TP140 (APC)
④ TP141 (CWCK)
4FSC OSC
Q140 2SC2715Y
Q141 2SA1226
X301
CV140: CHROMA WRITE CLOCK FREQUENCY

REF	NTSC	PAL
R350	0	NOMT
R351	NOMT	0
R352	NOMT	0
R353	0	NOMT
R354	NOMT	0
R355	0	NOMT
R605	NOMT	0
R606	0	NOMT
R607	0	NOMT
R608	0	NOMT
R162	NOMT	0
R163	0	NCMT
R164	0	NOMT
R165	NOMT	0
R400	NOMT	0
R401	0	NOMT
R700	NOMT	0
R701	0	NOMT
R702	0	NOMT
R703	NOMT	0
R704	0	NOMT
R705	NOMT	0
R706	0	NOMT
R707	NOMT	0
R500	0	NOMT
R501	NOMT	0
R502	0	NOMT
R503	NOMT	0
C711	12p	22p
R710	100K	150K
L140	2.7μ	1.5μ
R149	10k	33k
R240	NOMT	0
R241	0	NOMT
R802	NOMT	0
R803	0	NOMT

	NTSC ONLY (PAL NOMT)	PAL ONLY (NTSC NOMT)
R	R16 R17 R18 R22	R620 R621 R622 R623 R624 R625 R626 R19 R627 R362
C	C14	C620 C621 C622 C623 C624
D		D620 D350
CV		CV620
X		X620
IC		IC350 IC351 IC600 IC601 IC602 IC603 IC604
Q	Q11	Q620 Q621
L	L11	

REF NO.	NTSC	PAL
X301	14.31818MHz (1-527-722-31)	17.734475MHz (1-579-057-21)
X550	14.31818MHz (1-567-866-11)	14.21875MHz (1-577-704-11)
X620	NOMT	17.734475MHz (1-579-057-21)
FL30	(1-235-161-12)	(1-235-181-11)

VM-12P (1/5)

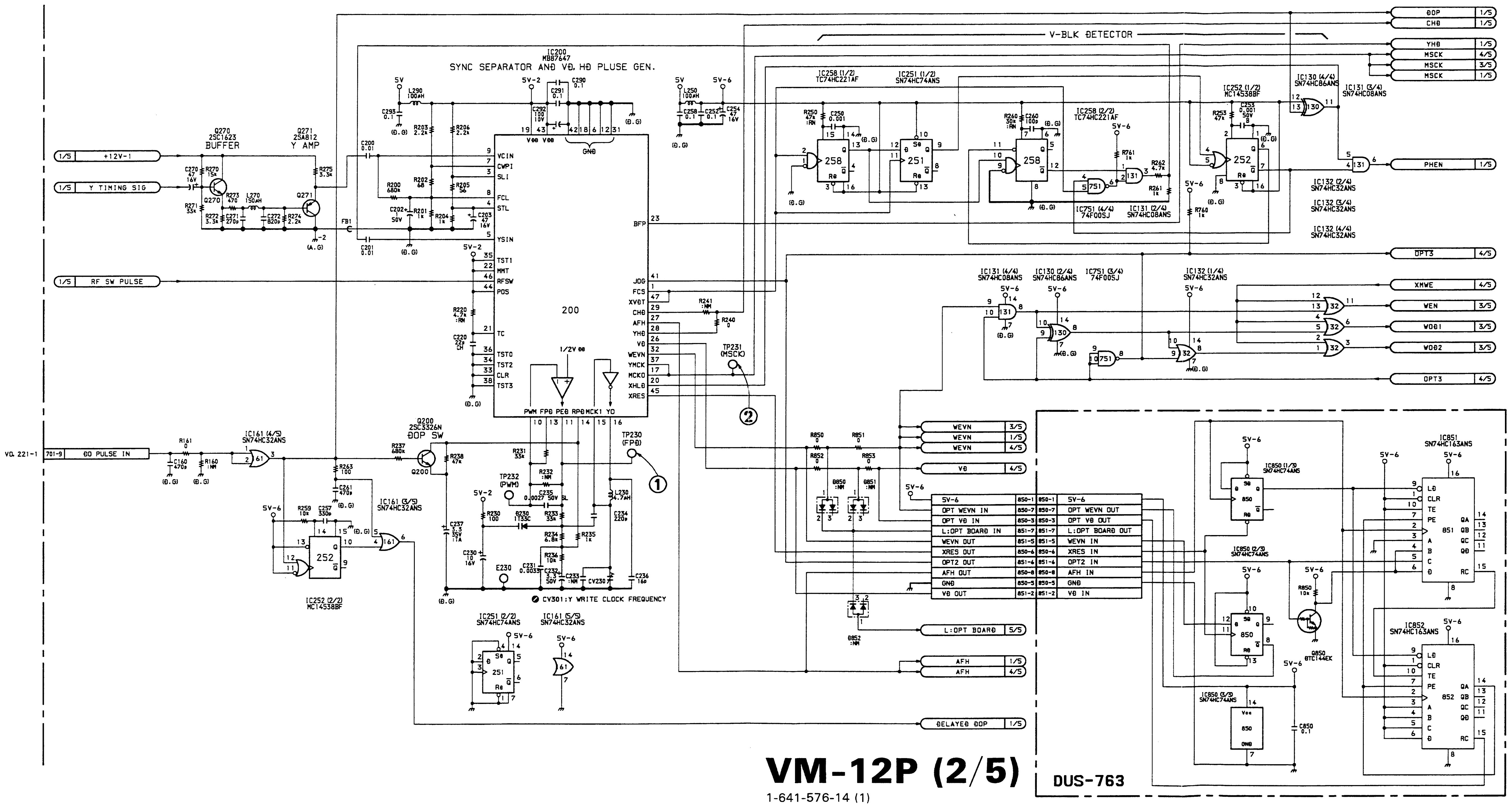
1-641-576-14 (1)
SVO-9500MDP

VM-12P (2/5), DUS-763

VM-12P (2/5) ; SYNC SEPARATOR, VD/HD PULSE GENERATOR

S/N 11431 to 15190 (EK)

DUS-763 S/N 13551 to 15190 (EK)


IC200 MB87647
SYNC SEPARATOR AND VD, HD PLUSE GEN.
Q270 2SC1623 BUFFER
Q271 2SA812 Y AMP
Q200 2SC3326N DOP SW
+12V-1
Y TIMING SIG
RF SW PULSE
DD PULSE IN
V-BLK DETECTOR
DOP
CHD
YHD
MSCK
PHEN
OPT3
XMWE
WEN
WDD1
WDD2
WEVN
VD
L:OPT BOARD
AFH
DELAYED DOP
TP230 (FPD)
TP231 (MSCK)
TP232 (PWM)
CV301:Y WRITE CLOCK FREQUENCY
IC161 SN74HC32ANS
IC252 MC14538BF
IC251 SN74HC74ANS
IC258 TC74HC221AF
IC130 SN74HC86ANS
IC131 SN74HC08ANS
IC132 SN74HC32ANS
IC751 74F00SJ
IC850 SN74HC74ANS
IC851 SN74HC163ANS
IC852 SN74HC163ANS
Q850 DTC144EK
5V-6
OPT WEVN IN
OPT VD IN
L:OPT BOARD IN
WEVN OUT
XRES OUT
OPT2 OUT
AFH OUT
GND
VD OUT
OPT WEVN OUT
OPT VD OUT
L:OPT BOARD OUT
WEVN IN
XRES IN
OPT2 IN
AFH IN
VD IN

VM-12P (2/5)

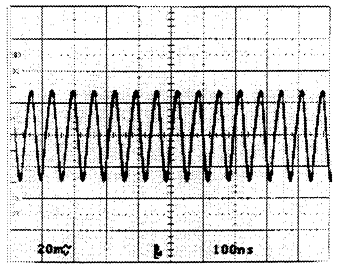
1-641-576-14 (1)
SVO-9500MDP

DUS-763

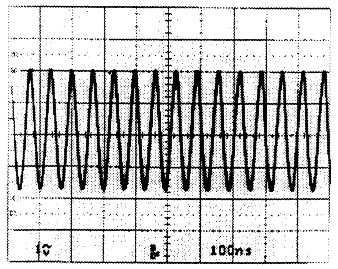
DUS-763

1-653-161-11 (1)
SVO-9500MDP

① TP230 (E-5)

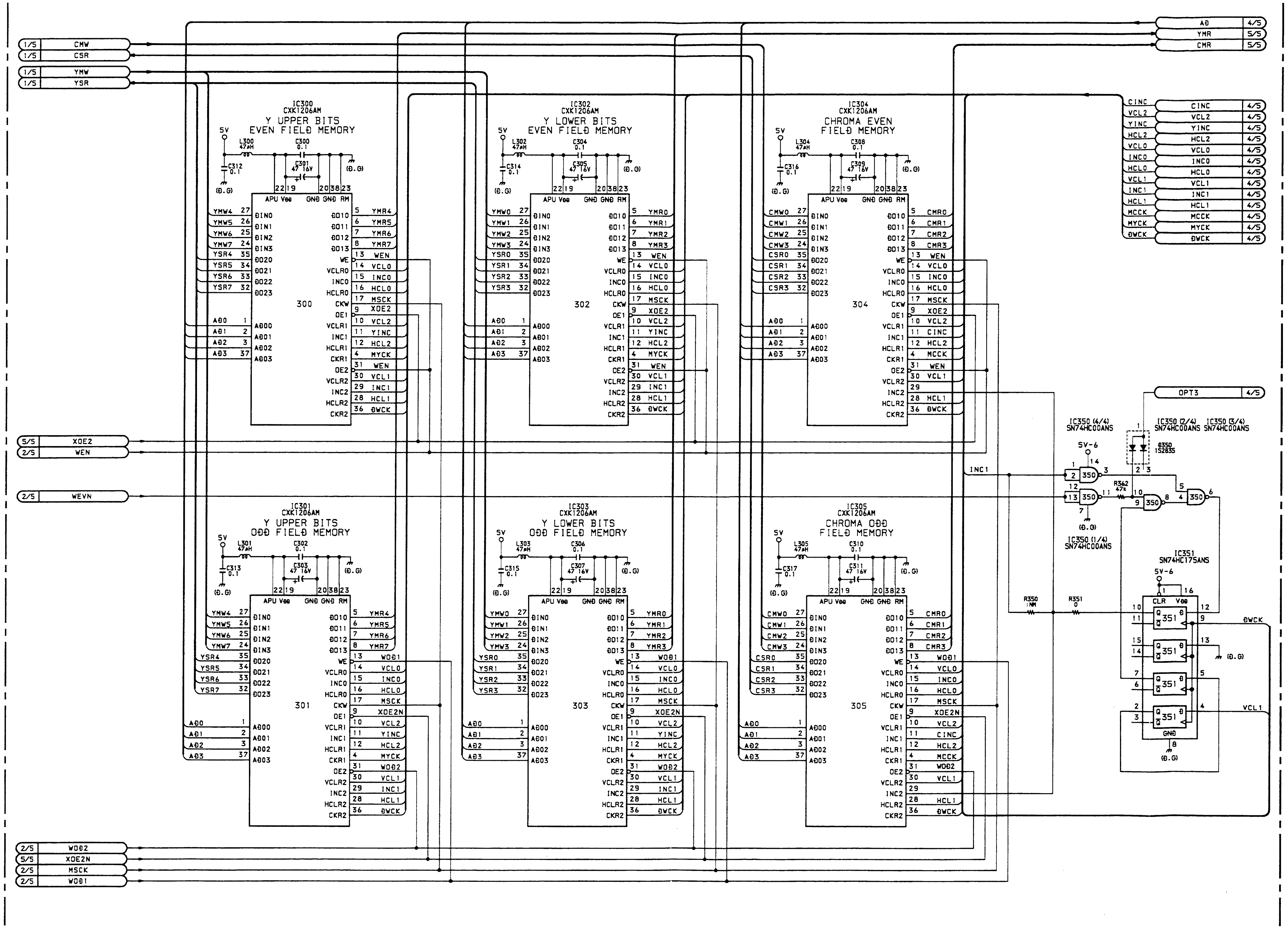


② TP231 (D-4)



13-17 (a)

VM-12P (3/5) ; Y/CHROMA FIELD MEMORY **S/N 11431 to 15190 (EK)**

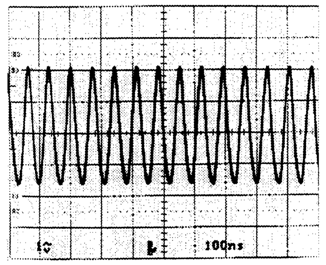

1/5 CMW
1/5 CSR
1/5 YMW
1/5 YSR
5/5 XOE2
2/5 WEN
2/5 WEVN
2/5 WOB2
5/5 XOE2N
2/5 MSCK
2/5 WOB1
AO 4/5
YMR 5/5
CMR 5/5
CINC 4/5
VCL2 4/5
YINC 4/5
HCL2 4/5
VCLO 4/5
INCO 4/5
HCLO 4/5
VCL1 4/5
INC1 4/5
HCL1 4/5
MCCK 4/5
MYCK 4/5
ØWCK 4/5
OPT3 4/5
IC300 CXK1206AM Y UPPER BITS EVEN FIELD MEMORY
IC302 CXK1206AM Y LOWER BITS EVEN FIELD MEMORY
IC304 CXK1206AM CHROMA EVEN FIELD MEMORY
IC301 CXK1206AM Y UPPER BITS ODD FIELD MEMORY
IC303 CXK1206AM Y LOWER BITS ODD FIELD MEMORY
IC305 CXK1206AM CHROMA ODD FIELD MEMORY
IC350 (4/4) SN74HC00ANS
IC350 (2/4) SN74HC00ANS
IC350 (3/4) SN74HC00ANS
IC350 (1/4) SN74HC00ANS
D350 1S2835
IC351 SN74HC175ANS
5V
5V-6
INC1
VCL1
(O.G)

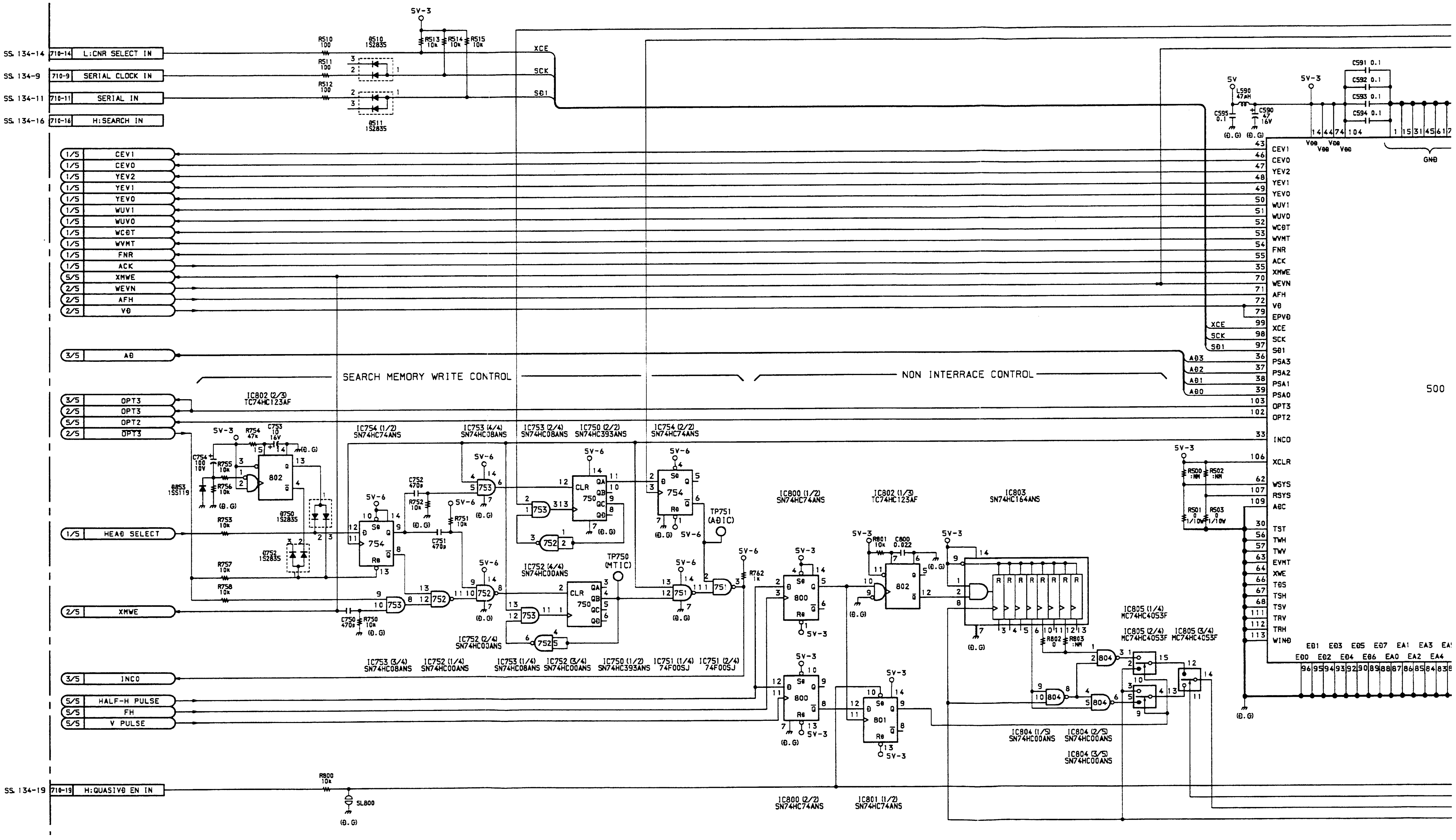
VM-12P (3/5)

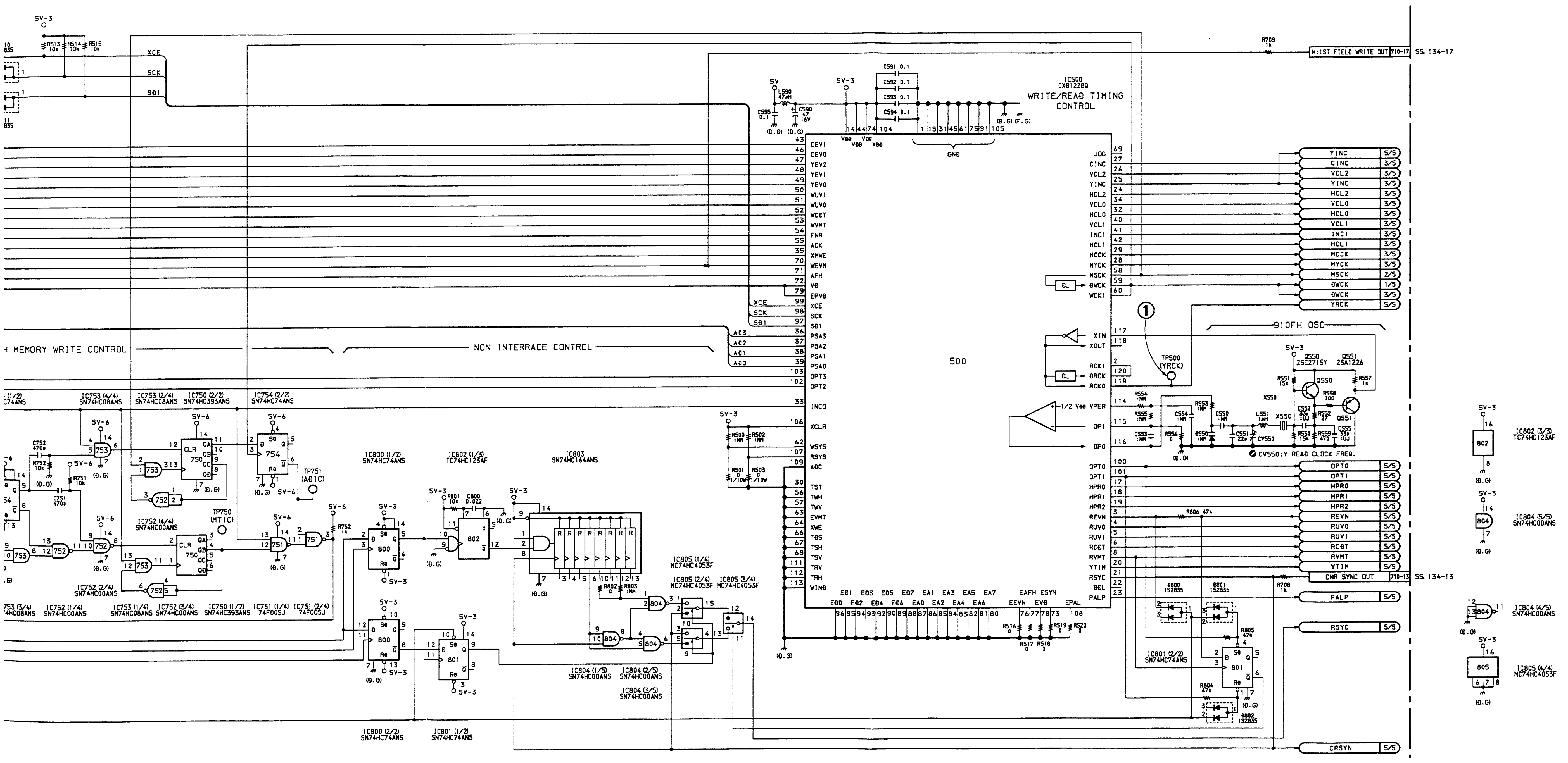
1-641-576-14 (1)
SVO-9500MDP

VM-12P (4/5) ; WRITE/READ TIMING CONTROL S/N 11431 to 15190 (EK)

① TP500 (F-1)




SS 134-14 710-14 L:CNR SELECT IN
SS 134-9 710-9 SERIAL CLOCK IN
SS 134-11 710-11 SERIAL IN
SS 134-16 710-16 H:SEARCH IN
SV-3
R510 100
R511 100
R512 100
D510 1S2835
D511 1S2835
R513 10k
R514 10k
R515 10k
XCE
SCK
S01
1/5 CEV1
1/5 CEV0
1/5 YEV2
1/5 YEV1
1/5 YEV0
1/5 WUV1
1/5 WUV0
1/5 WC0T
1/5 WVMT
1/5 FNR
1/5 ACK
5/5 XMWE
2/5 WEVN
2/5 AFH
2/5 V0
3/5 A0
3/5 OPT3
2/5 OPT3
5/5 OPT2
2/5 OPT3
SEARCH MEMORY WRITE CONTROL
NON INTERRACE CONTROL
IC802 (2/3) TC74HC123AF
IC754 (1/2) SN74HC74ANS
IC753 (4/4) SN74HC08ANS
IC753 (2/4) SN74HC08ANS
IC750 (2/2) SN74HC393ANS
IC754 (2/2) SN74HC74ANS
1/5 HEAD SELECT
2/5 XMWE
3/5 INCO
5/5 HALF-H PULSE
5/5 FH
5/5 V PULSE
SS 134-19 710-19 H:QUASIV0 EN IN
R800 10k
SL800
(0.G)
TP751 (A0IC)
TP750 (MTIC)
IC752 (4/4) SN74HC00ANS
IC752 (2/4) SN74HC00ANS
IC753 (3/4) SN74HC08ANS
IC752 (1/4) SN74HC00ANS
IC753 (1/4) SN74HC08ANS
IC752 (3/4) SN74HC00ANS
IC750 (1/2) SN74HC393ANS
IC751 (1/4) 74F00SJ
IC751 (2/4) 74F00SJ
IC800 (1/2) SN74HC74ANS
IC802 (1/3) TC74HC123AF
IC803 SN74HC164ANS
IC800 (2/2) SN74HC74ANS
IC801 (1/2) SN74HC74ANS
IC804 (1/5) SN74HC00ANS
IC804 (2/5) SN74HC00ANS
IC804 (3/5) SN74HC00ANS
IC805 (1/4) MC74HC4053F
IC805 (2/4) MC74HC4053F
IC805 (3/4) MC74HC4053F
R762 1k
R801 10k
C800 0.022
SV-6
5V
L590 47μH
C590 47 16V
C595 0.1
C591 0.1
C592 0.1
C593 0.1
C594 0.1
R500 :NM
R502 :NM
R501 0
R503 0
CEV1
CEV0
YEV2
YEV1
YEV0
WUV1
WUV0
WC0T
WVMT
FNR
ACK
XMWE
WEVN
AFH
V0
EPV0
XCE
SCK
S01
PSA3
PSA2
PSA1
PSA0
OPT3
OPT2
INCO
XCLR
WSYS
RSYS
A0C
TST
TWH
TWV
EVMT
XWE
TDS
TSH
TSV
TRV
TRH
WIN0
A03
A02
A01
A00
V00
GND
500
E01 E03 E05 E07 EA1 EA3
E00 E02 E04 E06 EA0 EA2 EA4

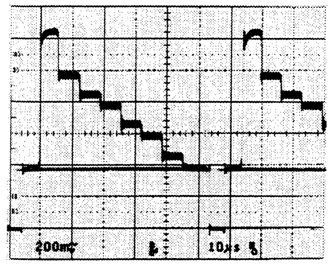

IC500
CX01228Q
WRITE/READ TIMING CONTROL
500
GND
H MEMORY WRITE CONTROL
NON INTERRACE CONTROL
310FH OSC
XCE
SCK
SOI
5V-3
5V-6
5V
L590 47μH
C590 47 16V
C591 0.1
C592 0.1
C593 0.1
C594 0.1
C595 0.1
(D.G)
(F.G)
CEV1
CEV0
YEV2
YEV1
YEV0
WUV1
WUV0
WCDT
WVMT
FNR
ACK
XMWE
WEVN
AFH
VD
EPVD
PSA3
PSA2
PSA1
PSA0
OPT3
OPT2
INCO
XCLR
WSYS
RSYS
ABC
TST
TWH
TWV
EVMT
XWE
TBS
TSH
TSV
TRV
TRH
WIND
JOG
CINC
VCL2
YINC
HCL2
VCLO
HCLO
VCL1
INC1
HCL1
MCCK
MYCK
MSCK
DWCK
WCK1
XIN
XOUT
RCK1
DRCK
RCKO
VPER
OPI
OPO
OPT0
OPT1
HPR0
HPR1
HPR2
REVN
RUV0
RUV1
RCDT
RVMT
YTIM
RSYC
BDL
PALP
H:1ST FIELD WRITE OUT 710-17 SS 134-17
CNR SYNC OUT 710-13 SS 134-13
CRSYN
RSYC
PALP
S/S
3/S
1/S
2/S
R709 1k
R708 1k
R806 47k
R805 47k
R804 47k
TP500 (YRCK)
TP750 (MTIC)
TP751 (ADIC)
①
Q550 2SC2715Y
Q551 2SA1226
X550
L551 1mH
CV550
CV550: Y READ CLOCK FREQ.
D550
D800 1SS835
D801 1SS835
D802 1SS835
IC750 (2/2) SN74HC393ANS
IC750 (1/2) SN74HC393ANS
IC751 (1/4) 74F00SJ
IC751 (2/4) 74F00SJ
IC752 (1/4) SN74HC00ANS
IC752 (2/4) SN74HC00ANS
IC752 (3/4) SN74HC00ANS
IC752 (4/4) SN74HC00ANS
IC753 (1/4) SN74HC08ANS
IC753 (2/4) SN74HC08ANS
IC753 (3/4) SN74HC08ANS
IC753 (4/4) SN74HC08ANS
IC754 (2/2) SN74HC74ANS
IC800 (1/2) SN74HC74ANS
IC800 (2/2) SN74HC74ANS
IC801 (1/2) SN74HC74ANS
IC801 (2/2) SN74HC74ANS
IC802 (1/3) TC74HC123AF
IC802 (3/3) TC74HC123AF
IC803 SN74HC164ANS
IC804 (1/5) SN74HC00ANS
IC804 (2/5) SN74HC00ANS
IC804 (3/5) SN74HC00ANS
IC804 (4/5) SN74HC00ANS
IC804 (5/5) SN74HC00ANS
IC805 (1/4) MC74HC4053F
IC805 (2/4) MC74HC4053F
IC805 (3/4) MC74HC4053F
IC805 (4/4) MC74HC4053F
C752 470p
C751 470p
R752 10k
R751 10k
R762 1k
R801 10k
C800 0.022
R513 10k
R514 10k
R515 10k
1
2
3
4
5
E
F
G
H
I
J
K
L

VM-12P (4/5)

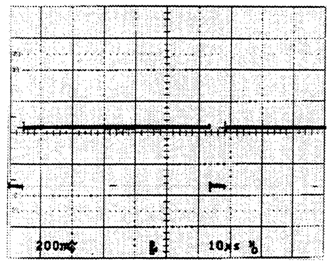
1-641-576-14 (1)
SVO-9500MDP

VM-12P (5/5); Y ENHANCER, CHROMA ENCODER, Y/C D-A CONVERTER S/N 11431 to 15190 (EK)

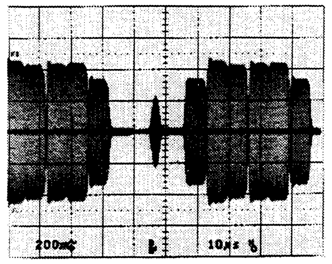
① TP10 (A-1) PB mode



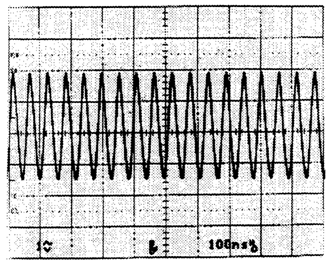
TP10 (A-1) STOP (E-E) mode



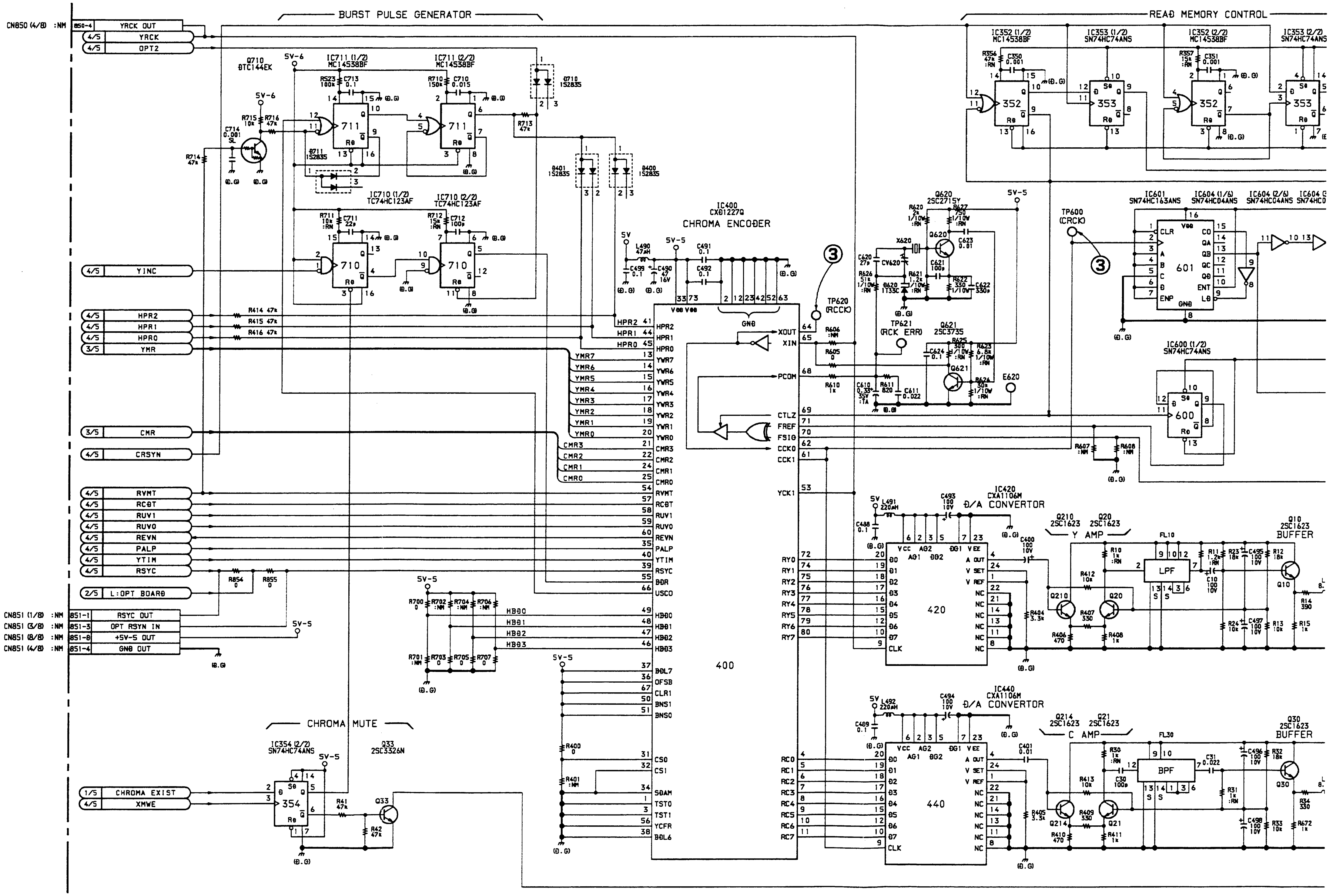
② TP30 (A-1) PB mode

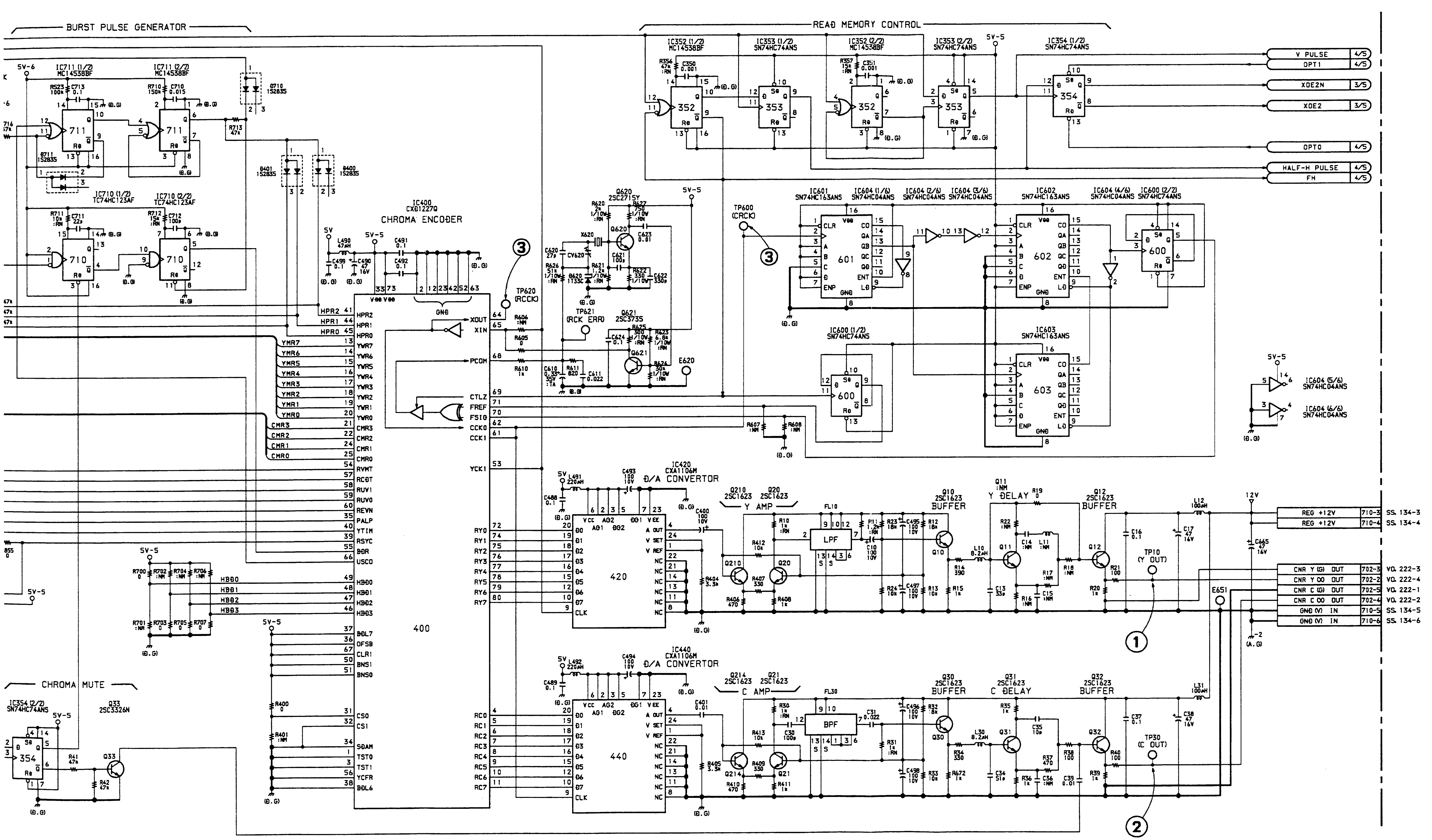


③ TP600 (D-1)
TP620 (C-1)



Measurement Condition
PB mode: KRV-45HPS
STOP (E-E) mode: S-VHS


BURST PULSE GENERATOR
READ MEMORY CONTROL
IC711 (1/2) MC14538BF
IC711 (2/2) MC14538BF
IC710 (1/2) TC74HC123AF
IC710 (2/2) TC74HC123AF
Q710 DTC144EK
IC400 CXD1227Q CHROMA ENCODER
IC352 (1/2) MC14538BF
IC353 (1/2) SN74HC74ANS
IC352 (2/2) MC14538BF
IC601 SN74HC163ANS
IC600 (1/2) SN74HC74ANS
Q620 2SC2715Y
Q621 2SC3735
TP600 (RCCK)
TP620 (RCCK)
TP621 (RCK ERR)
IC420 CXA1106M D/A CONVERTOR
IC440 CXA1106M D/A CONVERTOR
Q210 2SC1623
Q20 2SC1623
Y AMP
LPF
Q10 2SC1623 BUFFER
Q214 2SC1623
Q21 2SC1623
C AMP
BPF
Q30 2SC1623 BUFFER
CHROMA MUTE
IC354 (2/2) SN74HC74ANS
Q33 2SC3326N
CN850 (4/8)
CN851 (1/8)
CN851 (3/8)
CN851 (8/8)
CN851 (4/8)
YRCK OUT
YRCK
OPT2
YINC
HPR2
HPR1
HPR0
YMR
CMR
CRSYN
RVMT
RCBT
RUV1
RUV0
REVN
PALP
YTIM
RSYC
L:OPT BOARD
RSYC OUT
OPT RSYN IN
+5V-5 OUT
GND OUT
CHROMA EXIST
XMWE
5V-5
5V-6


BURST PULSE GENERATOR
READ MEMORY CONTROL
CHROMA MUTE
IC711 (1/2) MC14538BF
IC711 (2/2) MC14538BF
IC710 (1/2) TC74HC123AF
IC710 (2/2) TC74HC123AF
IC400 CXD1227Q CHROMA ENCODER
IC352 (1/2) MC14538BF
IC353 (1/2) SN74HC74ANS
IC352 (2/2) MC14538BF
IC353 (2/2) SN74HC74ANS
IC354 (1/2) SN74HC74ANS
IC601 SN74HC163ANS
IC604 (1/6) SN74HC04ANS
IC604 (2/6) SN74HC04ANS
IC604 (3/6) SN74HC04ANS
IC602 SN74HC163ANS
IC604 (4/6) SN74HC04ANS
IC600 (2/2) SN74HC74ANS
IC600 (1/2) SN74HC74ANS
IC603 SN74HC163ANS
IC604 (5/6) SN74HC04ANS
IC604 (6/6) SN74HC04ANS
IC354 (2/2) SN74HC74ANS
Q33 2SC3326N
Q620 2SC2715Y
Q621 2SC3735
TP600 (CRCK)
TP620 (RCCK)
TP621 (RCK ERR)
E620
IC420 CXA1106M D/A CONVERTOR
IC440 CXA1106M D/A CONVERTOR
Q210 2SC1623 Q20 2SC1623 Y AMP
Q214 2SC1623 Q21 2SC1623 C AMP
Q10 2SC1623 BUFFER
Q11 :NM Y DELAY
Q12 2SC1623 BUFFER
Q30 2SC1623 BUFFER
Q31 2SC1623 C DELAY
Q32 2SC1623 BUFFER
FL10 LPF
FL30 BPF
TP10 (Y OUT)
TP30 (C OUT)
E651
V PULSE 4/5
OPT1 4/5
XOE2N 3/5
XOE2 3/5
OPT0 4/5
HALF-H PULSE 4/5
FH 4/5
REG +12V 710-3 SS 134-3
REG +12V 710-4 SS 134-4
CNR Y (G) OUT 702-3 VD 222-3
CNR Y OO OUT 702-2 VD 222-4
CNR C (G) OUT 702-5 VD 222-1
CNR C OO OUT 702-4 VD 222-2
GND (V) IN 710-5 SS 134-5
GND (V) IN 710-6 SS 134-6
5V-5
5V-6
12V
(D.G)
(A.G)
①
②
③
1
2
3
4
5

VM-12P (5/5)

1-641-576-14 (1)
SVO-9500MDP

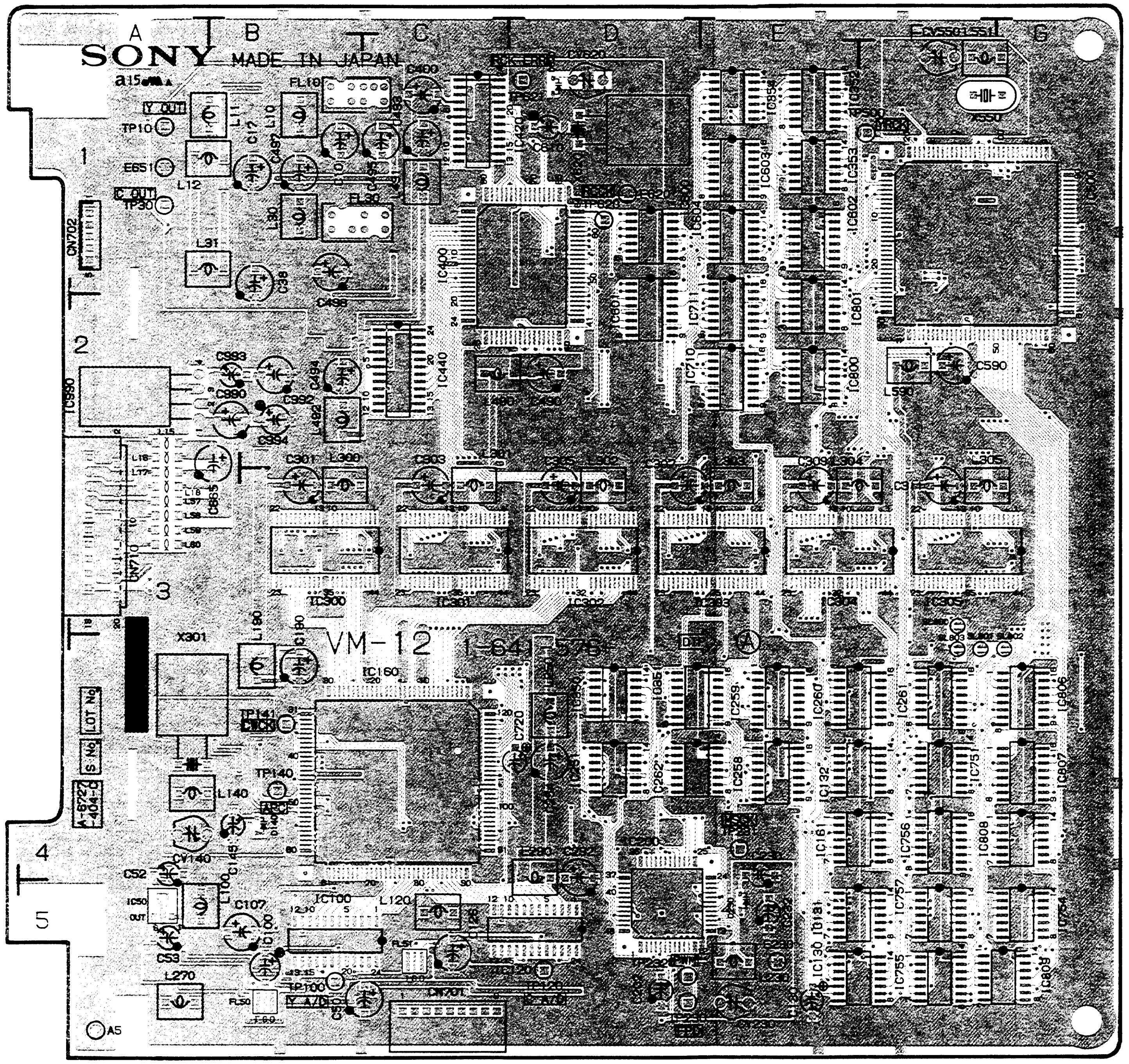
VM-12P ; CHROMA NOISE REDUCER/VIDEO MEMORY/CHROMA ENCODER S/N 15191 and higher (EK)

VM-12P (1-641-576-15, 16)

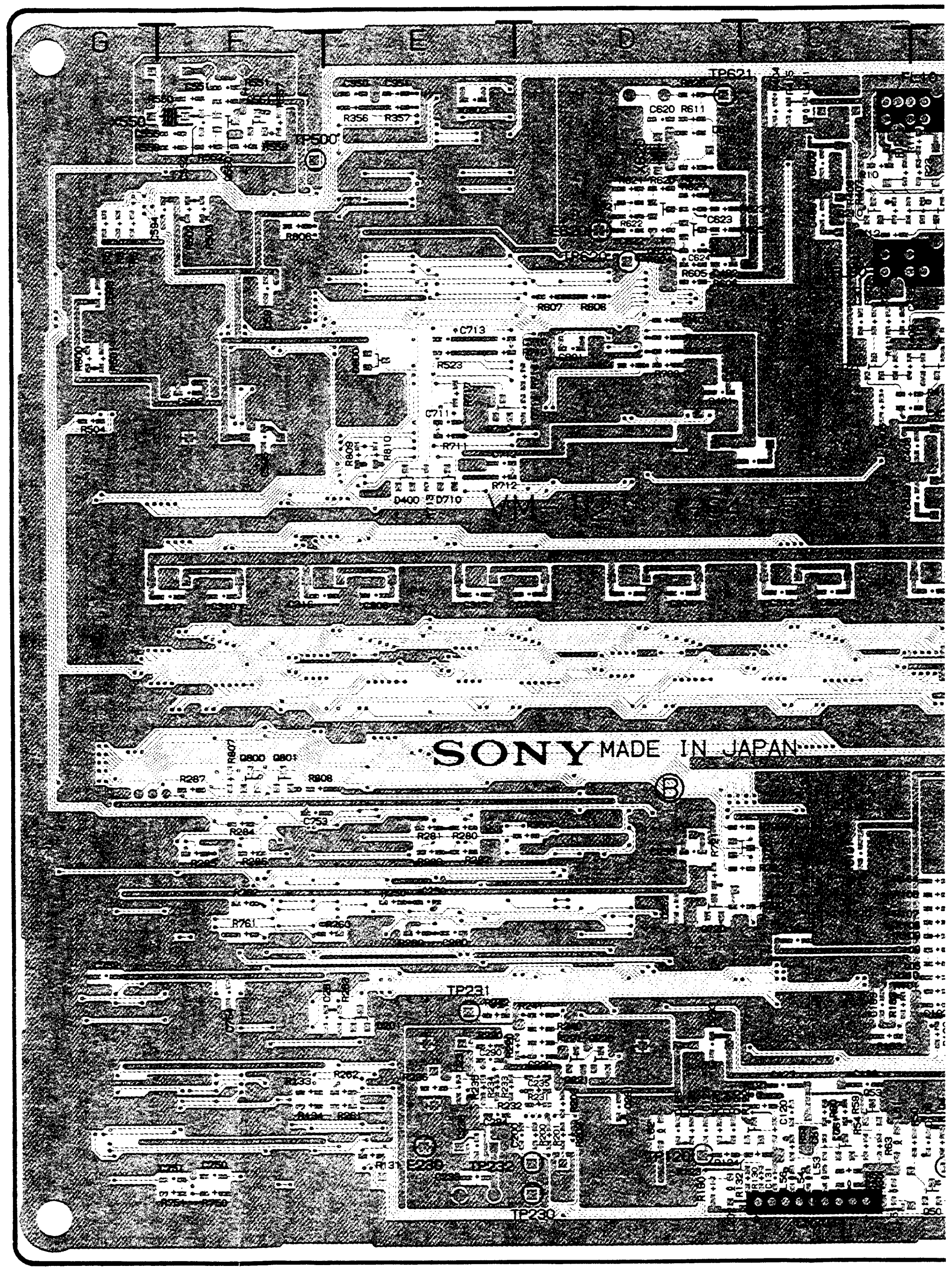
CN701	C-5
CN702	A-1
CN710	A-3
CV140	A-4
CV230	E-5
CV550	F-1
CV620	D-1
D140	B-4
D201	E-4 *
D230	E-5
D400	E-2 *
D620	D-1
D710	E-2 *
D720	D-4 *
D800	E-2 *
E230	E-5
E620	D-1
E651	A-1
FL10	B-1
FL30	B-1
FL50	B-5
FL51	C-5
IC50	A-5
IC100	C-5
IC120	D-5
IC130	E-5
IC131	E-5
IC132	E-4
IC160	C-4
IC161	E-4
IC200	D-5
IC251	D-4
IC258	E-4
IC259	E-4
IC300	B-3
IC301	C-3
IC302	D-3
IC303	E-3
IC304	E-3
IC305	F-3
IC350	D-4
IC351	D-4
IC352	E-1
IC353	E-1
IC354	E-1
IC400	D-1
IC420	C-1
IC440	C-2
IC500	F-1
IC600	D-1
IC601	D-2
IC602	E-1
IC603	E-1
IC604	E-1
IC710	E-2
IC711	E-2
IC751	F-4
IC754	G-5
IC755	F-5
IC756	F-4
IC757	F-5
IC800	E-2
IC801	E-2
IC806	G-4

IC807	G-4
IC808	G-4
IC809	G-5
IC990	A-2
Q10	B-1 *
Q12	B-1 *
Q20	B-1 *
Q21	C-2 *
Q30	B-1 *
Q31	B-1 *
Q32	B-1 *
Q33	A-1 *
Q50	B-5 *
Q51	C-5 *
Q52	B-5 *
Q53	C-5 *
Q54	B-5 *
Q100	B-5 *
Q120	C-5 *
Q140	B-4 *
Q141	B-4 *
Q210	C-1 *
Q214	B-2 *
Q220	D-5 *
Q221	D-5 *
Q270	A-5 *
Q271	B-5 *
Q550	F-1 *
Q551	F-1 *
Q620	D-1 *
Q621	D-1 *
Q710	E-2 *
Q720	D-4 *
Q800	F-4 *
Q801	F-4 *
TP10	A-1
TP30	A-1
TP100	B-5
TP120	D-5
TP140	B-4
TP141	B-4
TP230	D-5
TP231	E-4
TP232	D-5
TP500	F-1
TP620	D-1
TP621	D-1
X301	A-4
X550	F-1
X620	D-1

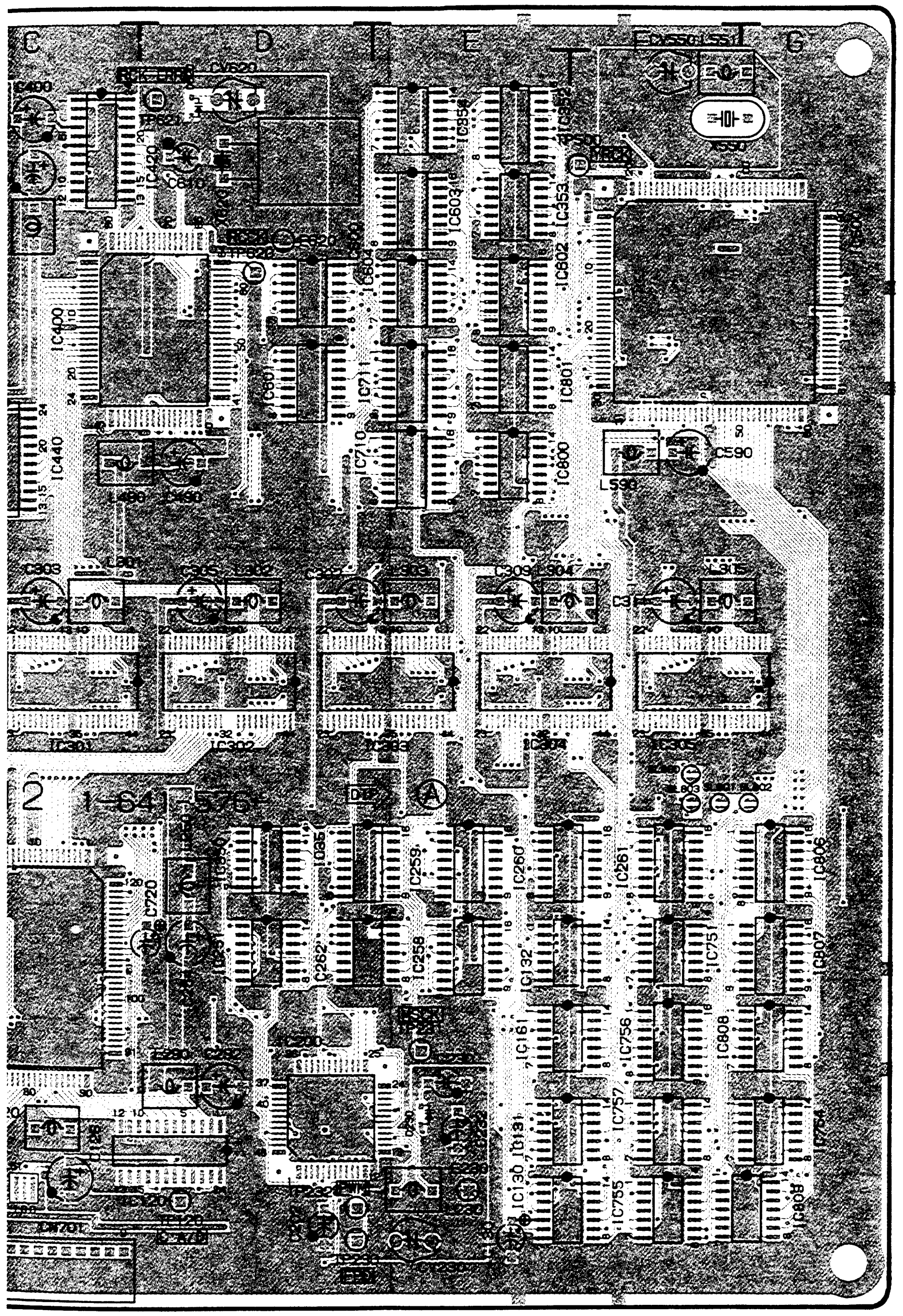
* mark ; B SIDE mount


A
B
C
D
E
F
G
1
2
3
4
5
SONY MADE IN JAPAN
VM-12
1-641-576
Y OUT
C OUT
TP10
TP30
E651
CN702
CN710
IC990
X301
TP140
TP141
L140
CV140
IC50
C52
C53
L270
C107
IC100
L120
TP100
CN701
FL10
FL30
FL50
FL51
IC160
IC300
IC400
IC440
C590
L590
X550
IC600
IC800
IC801
IC258
IC259
IC260
IC261
IC751
IC756
IC757
IC130
IC755
IC809
IC806
IC807

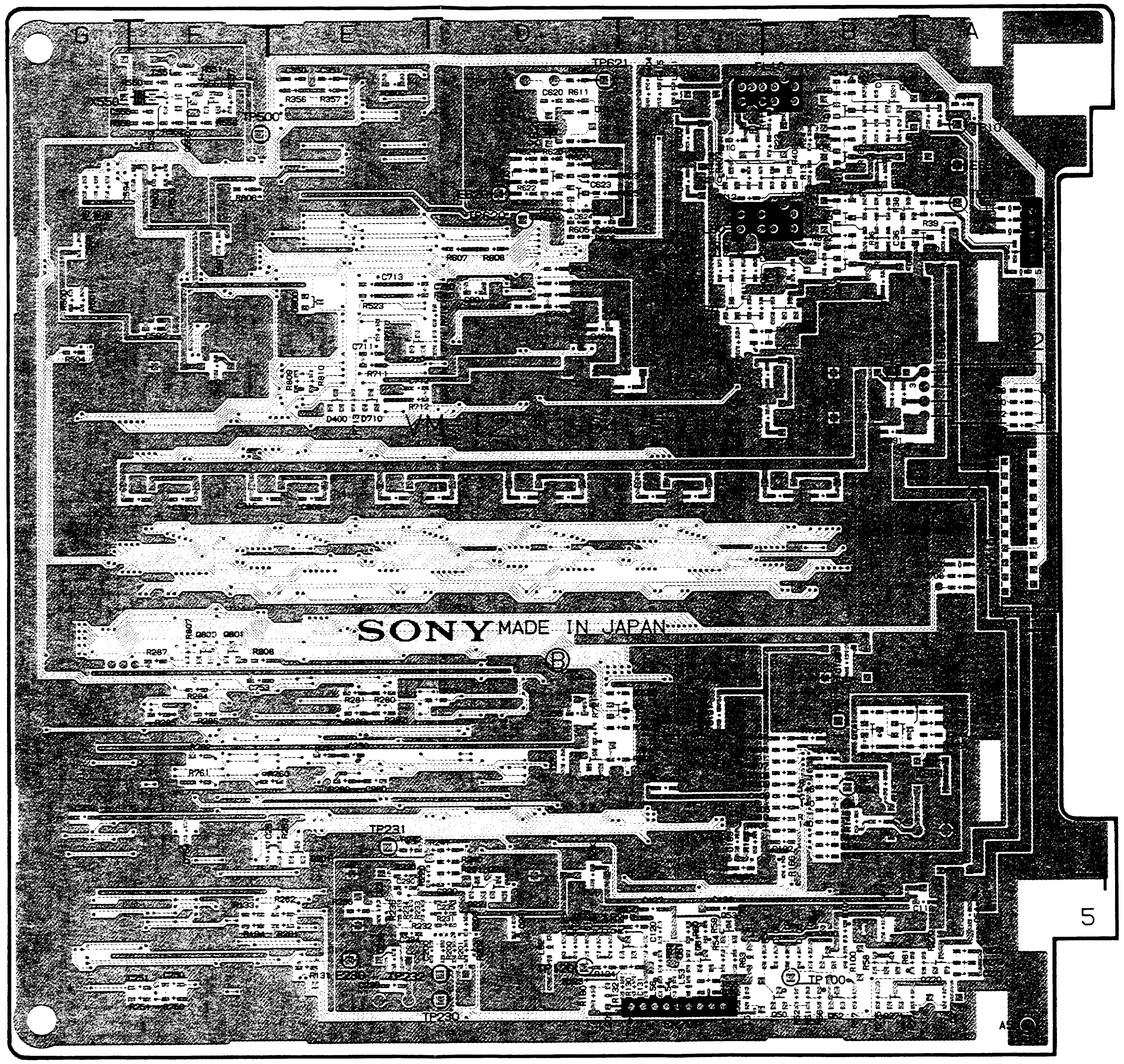
VM-12/P — A SIDE —
1-641-576-15, 16 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


G
F
E
D
SONY MADE IN JAPAN
TP621
TP500
R356
R357
C620
R611
C713
R523
D400
D710
R712
TP231
TP230

S/N 15191 and higher (EK)



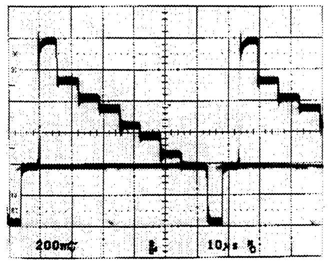
VM-12/P — A SIDE —
1-641-576-15, 16 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


SONY MADE IN JAPAN
5

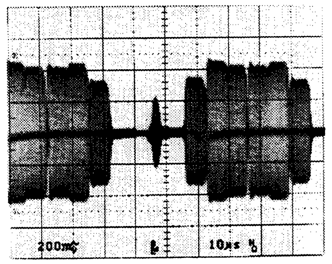
VM-12/P — B SIDE —
1-641-576-15, 16 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

VM-12P (1/5) ; Y/CHROMA A-D CONVERTERS, CHROMA NOISE REDUCER S/N 15191 and higher (EK)

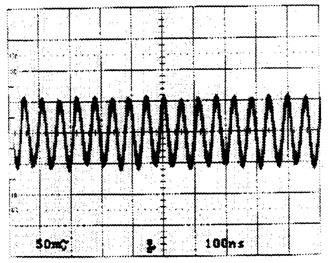
① TP100 (B-5) PB mode



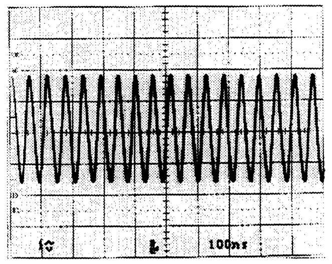
② TP120 (D-5) PB mode



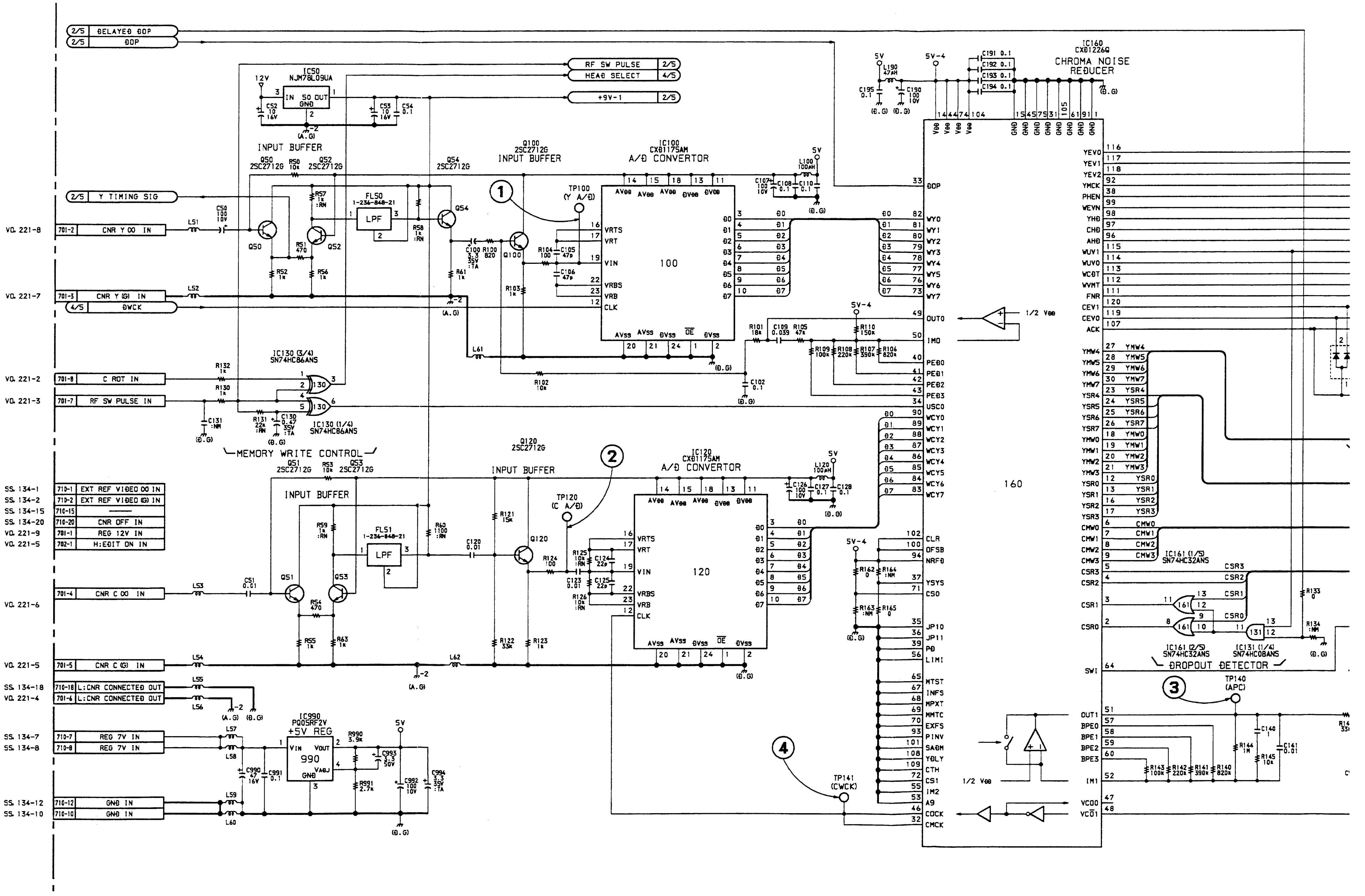
③ TP140 (B-4)



④ TP141 (B-4)



Measurement Condition
PB mode: KRV-45HPS

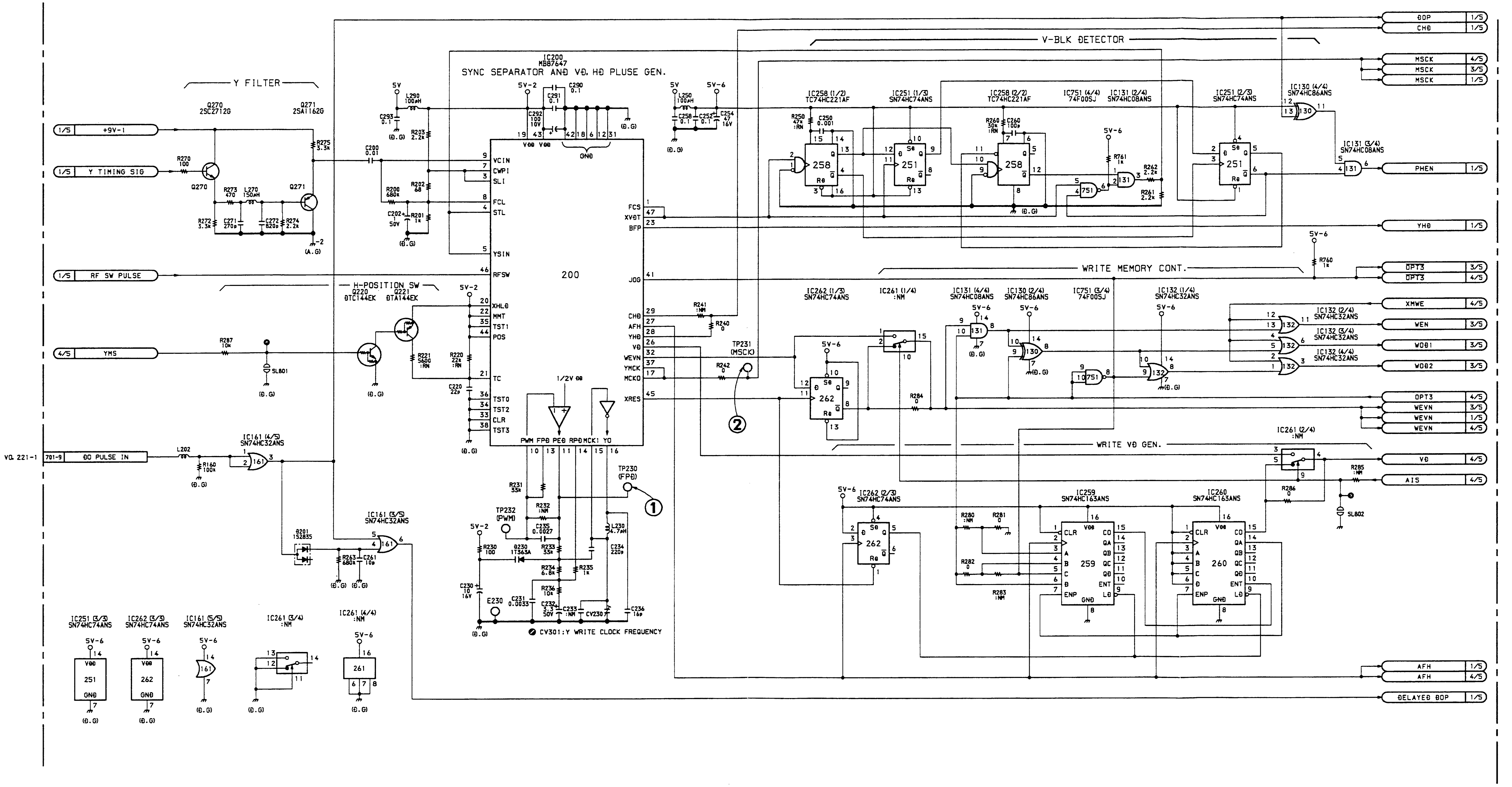

2/5 DELAYED DOP
2/5 DOP
RF SW PULSE 2/5
HEAD SELECT 4/5
+9V-1 2/5
IC50 NJM78L09UA
12V
IN 50 OUT
GND
INPUT BUFFER
Q50 2SC2712G
Q52 2SC2712G
Q54 2SC2712G
Q100 2SC2712G
INPUT BUFFER
IC100 CXD1175AM
A/D CONVERTOR
100
2/5 Y TIMING SIG
FL50 1-236-848-21
LPF
TP100 (Y A/D)
VC 221-8 701-2 CNR Y DD IN
VC 221-7 701-3 CNR Y (G) IN
4/5 DWCK
IC130 (3/4) SN74HC86ANS
VC 221-2 701-8 C ROT IN
VC 221-3 701-7 RF SW PULSE IN
IC130 (1/4) SN74HC86ANS
MEMORY WRITE CONTROL
Q51 2SC2712G
Q53 2SC2712G
INPUT BUFFER
Q120 2SC2712G
INPUT BUFFER
IC120 CXD1175AM
A/D CONVERTOR
120
TP120 (C A/D)
FL51 1-236-848-21
LPF
SS 134-1 710-1 EXT REF VIDEO DD IN
SS 134-2 710-2 EXT REF VIDEO (G) IN
SS 134-15 710-15
SS 134-20 710-20 CNR OFF IN
VC 221-9 701-1 REG 12V IN
VC 221-5 702-1 H:EDIT ON IN
701-4 CNR C DD IN
VC 221-6
VC 221-5 701-5 CNR C (G) IN
SS 134-18 710-18 L:CNR CONNECTED OUT
VC 221-4 701-6 L:CNR CONNECTED OUT
IC990 PQ05RF2V +5V REG
990
VIN VOUT VADJ GND
SS 134-7 710-7 REG 7V IN
SS 134-8 710-8 REG 7V IN
SS 134-12 710-12 GND IN
SS 134-10 710-10 GND IN
IC160 CXD1226Q
CHROMA NOISE REDUCER
160
5V-4
1/2 VDD
IC161 (1/5) SN74HC32ANS
IC161 (2/5) SN74HC32ANS
IC131 (1/4) SN74HC08ANS
DROPOUT DETECTOR
TP140 (APC)
TP141 (CWCK)
(A.G)
(D.G)

A | B | C | D | E | F | G | H

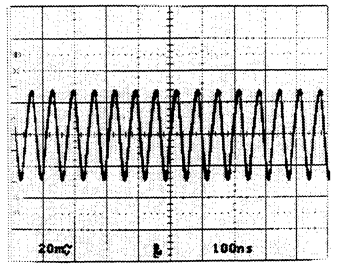
13-15 (b)

VM-12P (2/5) ; SYNC SEPARATOR, VD/HD PULSE GENERATOR

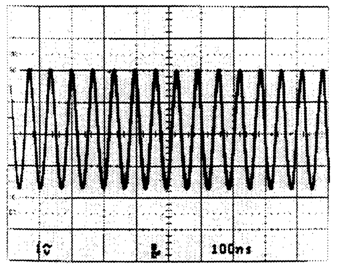
S/N 15191 and higher (EK)


Y FILTER
Q270 2SC2712G
Q271 2SA1162G
1/5 +9V-1
1/5 Y TIMING SIG
1/5 RF SW PULSE
4/5 YMS
VD 221-1
701-9 BD PULSE IN
H-POSITION SW
Q220 DTC144EK
Q221 DTA144EK
IC200 MB87647
SYNC SEPARATOR AND VD, HD PLUSE GEN.
VCIN
CWPI
SLI
FCL
STL
YSIN
RFSW
200
XHLD
MMT
TST1
POS
TC
TST0
TST2
CLR
TST3
FCS
XVDT
BFP
JOG
CHD
AFH
YHD
VD
WEVN
YMCK
MCKO
XRES
PWM FPD PED RPD MCK1 YO
1/2V DD
GND
TP230 (FPD)
TP231 (MSCK)
TP232 (PWM)
E230
CV301:Y WRITE CLOCK FREQUENCY
IC161 (4/5) SN74HC32ANS
IC161 (5/5) SN74HC32ANS
D201 1SS835
V-BLK DETECTOR
IC258 (1/2) TC74HC221AF
IC251 (1/3) SN74HC74ANS
IC258 (2/2) TC74HC221AF
IC751 (4/4) 74F00SJ
IC131 (2/4) SN74HC08ANS
IC251 (2/3) SN74HC74ANS
IC130 (4/4) SN74HC86ANS
IC131 (3/4) SN74HC08ANS
WRITE MEMORY CONT.
IC262 (1/3) SN74HC74ANS
IC261 (1/4) :NM
IC131 (4/4) SN74HC08ANS
IC130 (2/4) SN74HC86ANS
IC751 (3/4) 74F00SJ
IC132 (1/4) SN74HC32ANS
IC132 (2/4) SN74HC32ANS
IC132 (3/4) SN74HC32ANS
IC132 (4/4) SN74HC32ANS
WRITE VD GEN.
IC261 (2/4) :NM
IC262 (2/3) SN74HC74ANS
IC259 SN74HC163ANS
IC260 SN74HC163ANS
CLR
ENP
ENT
LD
GND
BOP 1/5
CHD 1/5
MSCK 4/5
MSCK 3/5
MSCK 1/5
PHEN 1/5
YHD 1/5
OPT3 3/5
OPT3 4/5
XMWE 4/5
WEN 3/5
WDB1 3/5
WDB2 3/5
OPT3 4/5
WEVN 3/5
WEVN 1/5
WEVN 4/5
VD 4/5
AIS 4/5
AFH 1/5
AFH 4/5
DELAYED BOP 1/5
SL801
SL802
IC251 (3/3) SN74HC74ANS
IC262 (3/3) SN74HC74ANS
IC161 (5/5) SN74HC32ANS
IC261 (3/4) :NM
IC261 (4/4) :NM
5V-6
(D.G)
(A.G)
1
2
3
4
5
A
B
C
D
E
F
G
H

① TP230 (E-5)



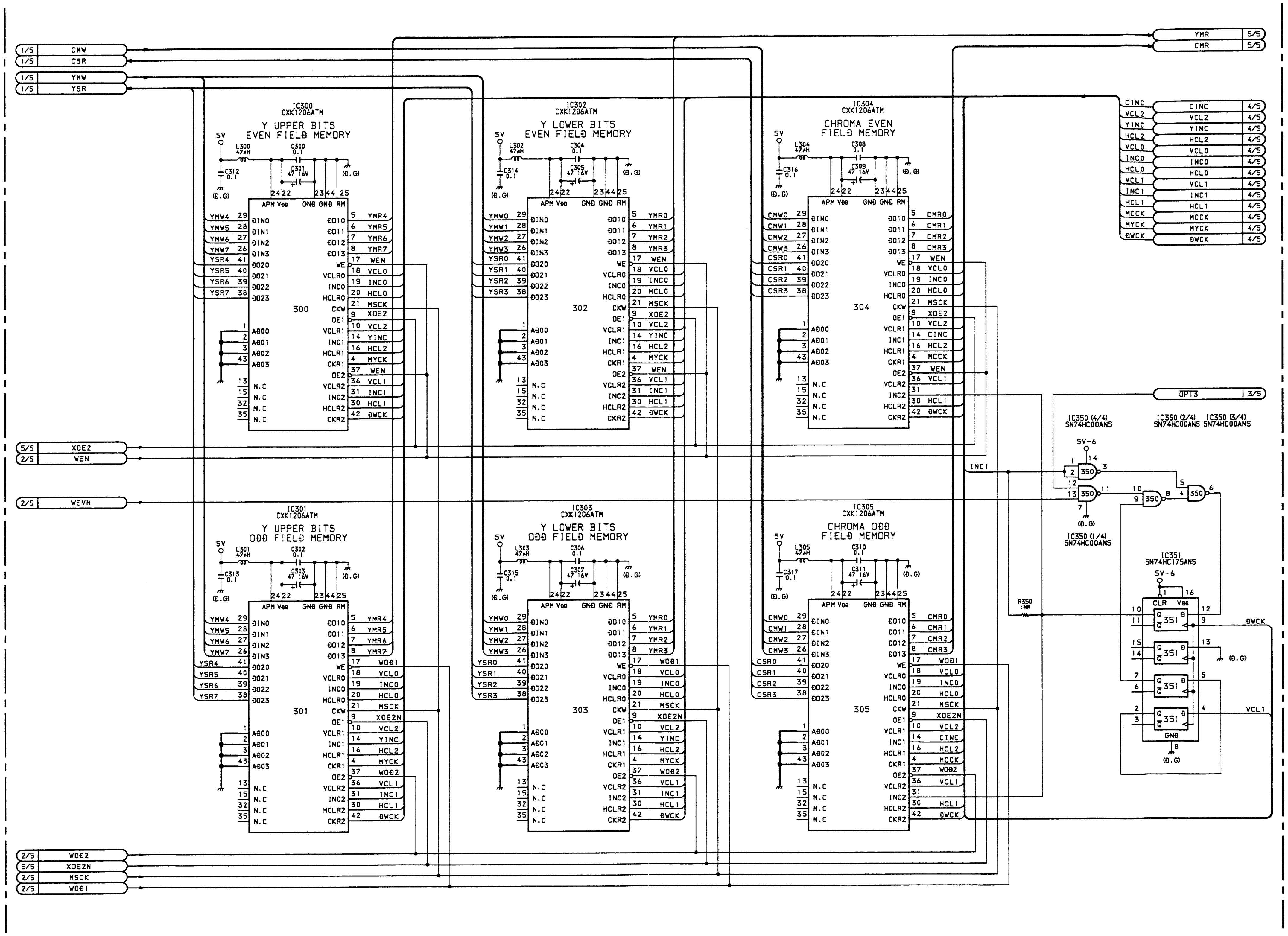
② TP231 (D-4)



VM-12P (2/5)

1-641-576-15, 16 (1)
SVO-9500MDP

VM-12P (3/5) ; Y/CHROMA FIELD MEMORY S/N 15191 and higher (EK)

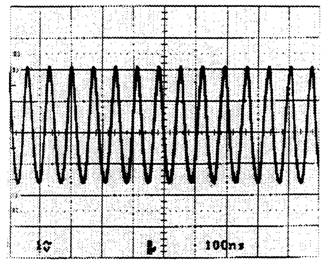

CMW
CSR
YMW
YSR
YMR
CMR
IC300 CXK1206ATM
Y UPPER BITS EVEN FIELD MEMORY
IC302 CXK1206ATM
Y LOWER BITS EVEN FIELD MEMORY
IC304 CXK1206ATM
CHROMA EVEN FIELD MEMORY
IC301 CXK1206ATM
Y UPPER BITS ODD FIELD MEMORY
IC303 CXK1206ATM
Y LOWER BITS ODD FIELD MEMORY
IC305 CXK1206ATM
CHROMA ODD FIELD MEMORY
5V
(D.G)
CINC
VCL2
YINC
HCL2
VCL0
INC0
HCL0
VCL1
INC1
HCL1
MCCK
MYCK
ØWCK
OPT3
XOE2
WEN
WEVN
WD02
XOE2N
MSCK
WD01
IC350 (4/4) SN74HC00ANS
IC350 (2/4) SN74HC00ANS
IC350 (3/4) SN74HC00ANS
IC350 (1/4) SN74HC00ANS
5V-6
IC351 SN74HC175ANS
R350 1MΩ
1/5
2/5
3/5
4/5
5/5
A
B
C
D
E
F
G
H
1
2
3
4
5

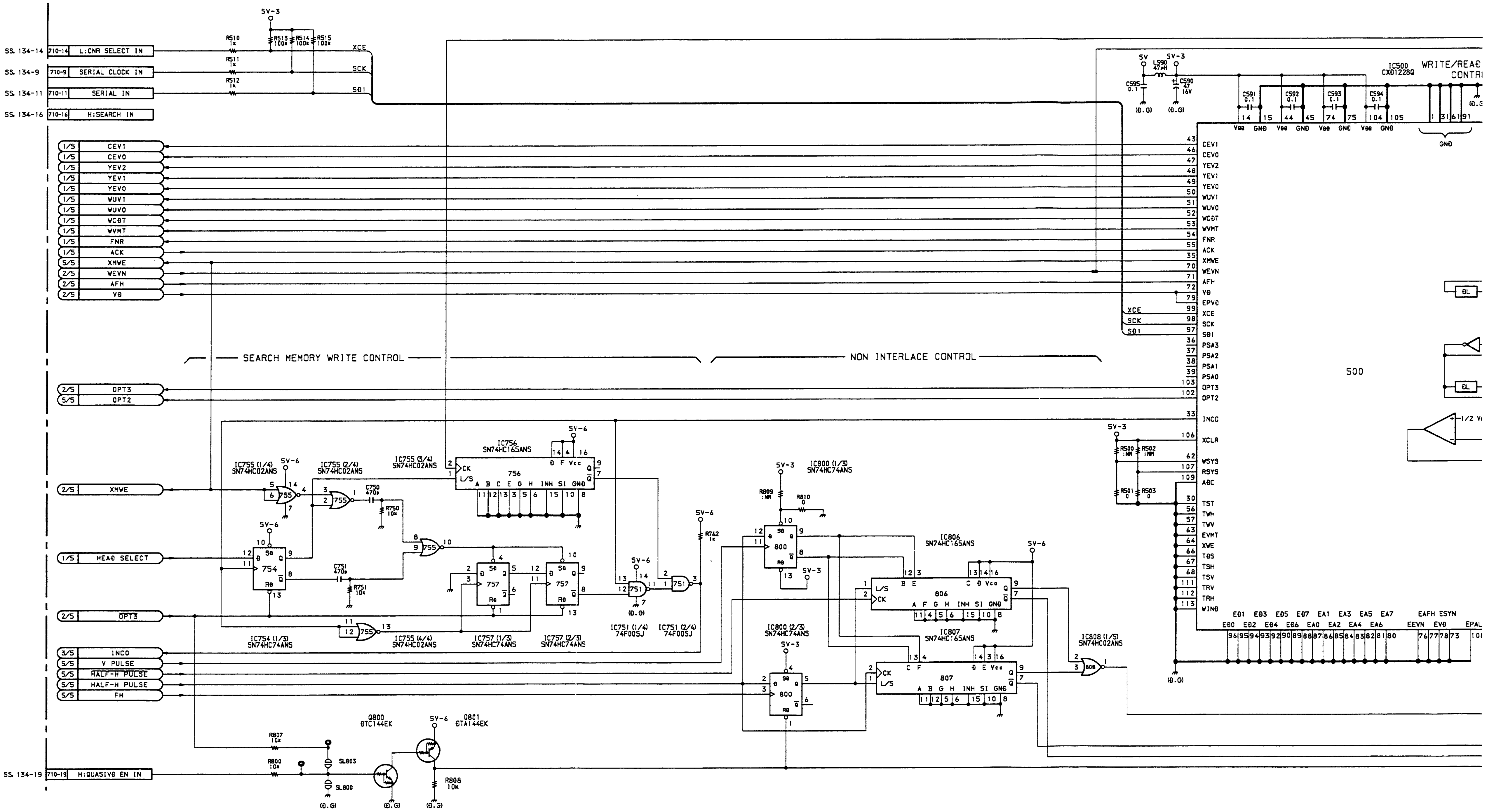
VM-12P (3/5)

1-641-576-15, 16 (1)
SVO-9500MDP

VM-12P (4/5) ; WRITE/READ TIMING CONTROL S/N 15191 and higher (EK)

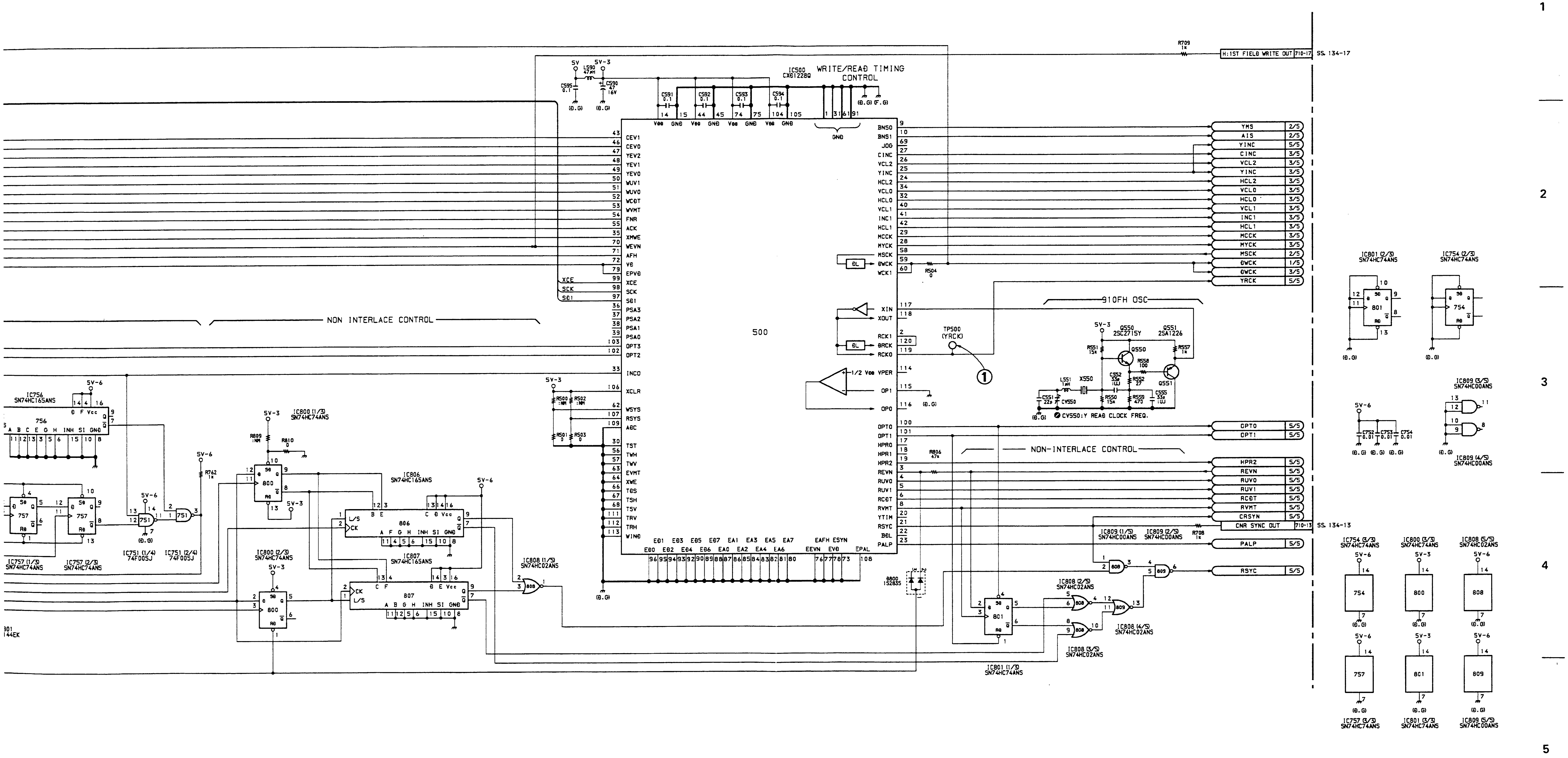
① TP500 (F-1)




SS. 134-14
710-14 L:CNR SELECT IN
SS. 134-9
710-9 SERIAL CLOCK IN
SS. 134-11
710-11 SERIAL IN
SS. 134-16
710-16 H:SEARCH IN
5V-3
R510 1k
R511 1k
R512 1k
R513 100k
R514 100k
R515 100k
XCE
SCK
SBI
1/5 CEV1
1/5 CEV0
1/5 YEV2
1/5 YEV1
1/5 YEV0
1/5 WUV1
1/5 WUV0
1/5 WCBT
1/5 WVMT
1/5 FNR
1/5 ACK
5/5 XMWE
2/5 WEVN
2/5 AFH
2/5 VB
SEARCH MEMORY WRITE CONTROL
NON INTERLACE CONTROL
2/5 OPT3
5/5 OPT2
2/5 XMWE
1/5 HEAD SELECT
2/5 OPT3
3/5 INCO
5/5 V PULSE
5/5 HALF-H PULSE
5/5 HALF-H PULSE
5/5 FH
SS. 134-19
710-19 H:QUASIVD EN IN
IC755 (1/4) SN74HC02ANS
IC755 (2/4) SN74HC02ANS
IC755 (3/4) SN74HC02ANS
IC756 SN74HC165ANS
IC754 (1/2) SN74HC74ANS
IC755 (4/4) SN74HC02ANS
IC757 (1/2) SN74HC74ANS
IC757 (2/2) SN74HC74ANS
IC751 (1/4) 74F00SJ
IC751 (2/4) 74F00SJ
IC800 (1/2) SN74HC74ANS
IC800 (2/2) SN74HC74ANS
IC806 SN74HC165ANS
IC807 SN74HC165ANS
IC808 (1/4) SN74HC02ANS
C750 470p
R750 10k
C751 470p
R751 10k
R742 1k
R809 :NM
R810 0
5V-6
5V-3
Q800 DTC144EK
Q801 DTA144EK
R807 10k
R800 10k
R808 10k
SL803
SL800
(D.G)
IC500 CXD1228Q WRITE/READ CONTR
5V
L590 47μH
C590 47 16V
C595 0.1
C591 0.1
C592 0.1
C593 0.1
C594 0.1
R500 :NM
R502 :NM
R501 0
R503 0
VDD GND VDD GND VDD GND VDD GND
CEV1 CEV0 YEV2 YEV1 YEV0 WUV1 WUV0 WCBT WVMT FNR ACK XMWE WEVN AFH VB EPVD XCE SCK SBI PSA3 PSA2 PSA1 PSA0 OPT3 OPT2 INCO XCLR WSYS RSYS ABC TST TWH TWV EVMT XWE TBS TSH TSV TRV TRH WIND
500
ED1 ED3 ED5 ED7 EA1 EA3 EA5 EA7 EAFH ESYN
ED0 ED2 ED4 ED6 EA0 EA2 EA4 EA6 EEVN EVD EPAL
-1/2 V

13-21 (b)   13-21 (b)

A | B | C | D | E | F | G | H |

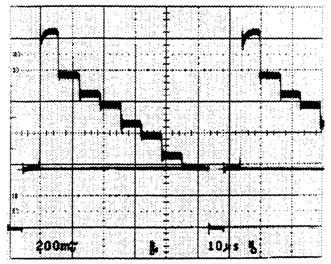

1
2
3
4
5
IC500
CXD1228Q
WRITE/READ TIMING CONTROL
500
SV
5V-3
L590 47µH
C595 0.1
C590 47 16V
C591 0.1
C592 0.1
C593 0.1
C594 0.1
(D.G)
(F.G)
VDD
GND
CEV1
CEV0
YEV2
YEV1
YEV0
WUV1
WUV0
WCOT
WVMT
FNR
ACK
XMWE
WEVN
AFH
V6
EPV0
XCE
SCK
SDI
PSA3
PSA2
PSA1
PSA0
OPT3
OPT2
INCO
XCLR
WSYS
RSYS
ABC
TST
TWH
TWV
EVMT
XWE
TDS
TSH
TSV
TRV
TRH
WIND
ED1 ED3 ED5 ED7 EA1 EA3 EA5 EA7
ED0 ED2 ED4 ED6 EA0 EA2 EA4 EA6
EAFH ESYN
EEVN EVD
EPAL
BNS0
BNS1
JOG
CINC
VCL2
YINC
HCL2
VCLO
HCLO
VCL1
INC1
HCL1
MCCK
MYCK
MSCK
DWCK
WCK1
XIN
XOUT
RCK1
DRCK
RCKO
1/2 VDD VPER
OP1
OPO
OPTO
OPT1
HPRO
HPR1
HPR2
REVN
RUVO
RUV1
RCOT
RVMT
YTIM
RSYC
DOL
PALP
DL
R504 0
TP500 (YRCK)
①
910FH OSC
Q550 2SC2715Y
Q551 2SA1226
R551 15k
R557 1k
R558 100
R552 27
C552 33p
C555 33p
L551 1mH
X550
C551 22p
CV550
R550 15k
R559 475
CV550:Y READ CLOCK FREQ.
R709 1k
H:1ST FIELD WRITE OUT 710-17
SS 134-17
YMS 2/5
AIS 2/5
YINC 5/5
CINC 3/5
VCL2 3/5
YINC 3/5
HCL2 3/5
VCLO 3/5
HCLO 3/5
VCL1 3/5
INC1 3/5
HCL1 3/5
MCCK 3/5
MYCK 3/5
MSCK 2/5
DWCK 1/5
DWCK 3/5
YRCK 5/5
OPTO 5/5
OPT1 5/5
NON-INTERLACE CONTROL
NON INTERLACE CONTROL
HPR2 5/5
REVN 5/5
RUVO 5/5
RUV1 5/5
RCOT 5/5
RVMT 5/5
CRSYN 5/5
CNR SYNC OUT 710-13
SS 134-13
PALP 5/5
RSYC 5/5
R806 47k
R708 1k
D800 1S2835
IC809 (1/5) SN74HC00ANS
IC809 (2/5) SN74HC00ANS
IC808 (1/5) SN74HC02ANS
IC808 (2/5) SN74HC02ANS
IC808 (3/5) SN74HC02ANS
IC808 (4/5) SN74HC02ANS
IC801 (1/3) SN74HC74ANS
IC801 (2/3) SN74HC74ANS
IC754 (2/3) SN74HC74ANS
IC809 (3/5) SN74HC00ANS
IC809 (4/5) SN74HC00ANS
5V-6
C752 0.01
C753 0.01
C754 0.01
IC754 (3/3) SN74HC74ANS
IC800 (3/3) SN74HC74ANS
IC808 (5/5) SN74HC02ANS
IC757 (3/3) SN74HC74ANS
IC801 (3/3) SN74HC74ANS
IC809 (5/5) SN74HC00ANS
754
800
808
757
801
809
IC756 SN74HC165ANS
756
IC757 (1/3) SN74HC74ANS
IC757 (2/3) SN74HC74ANS
IC751 (1/4) 74F00SJ
IC751 (2/4) 74F00SJ
751
R762 1k
IC800 (1/3) SN74HC74ANS
IC800 (2/3) SN74HC74ANS
R809 :NM
R810 0
IC806 SN74HC165ANS
806
IC807 SN74HC165ANS
807
L/S
CK
A F G H INH SI GND
B E
C D Vcc
R500 :NM
R502 :NM
R501 0
R503 0
801
144EK

VM-12P (4/5)

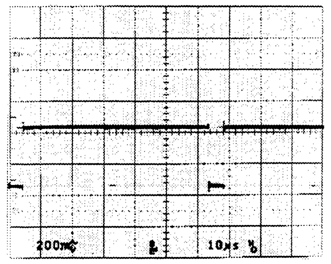
1-641-576-15, 16 (1)
SVO-9500MDP

VM-12P (5/5) ; Y ENHANCER, CHROMA ENCODER, Y/C D-A CONVERTER S/N 15191 and higher (EK)

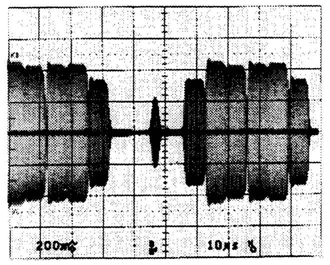
① TP10 (A-1) PB mode



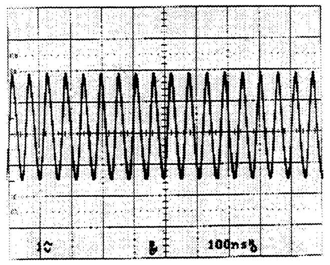
TP10 (A-1) STOP (E-E) mode



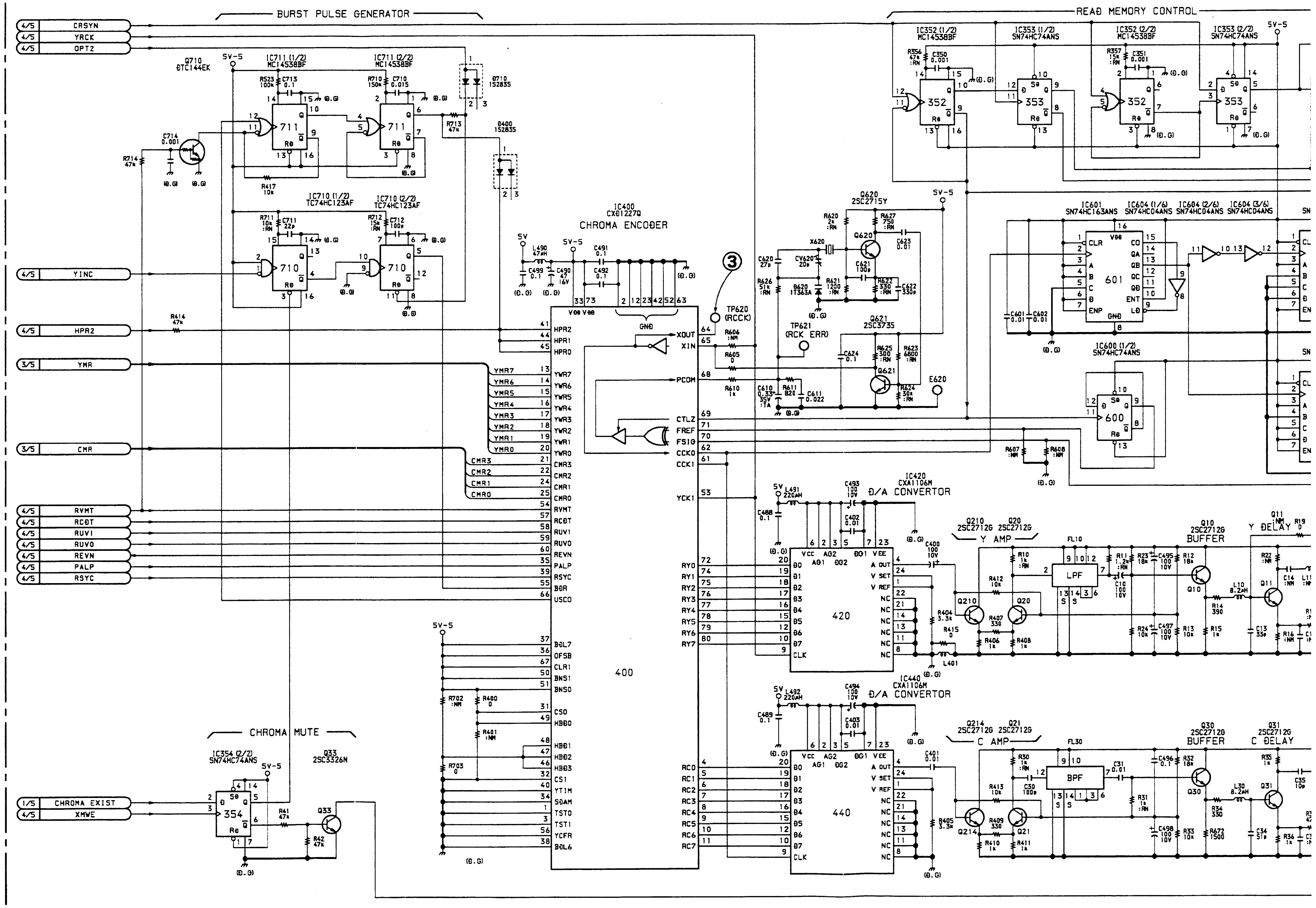
② TP30 (A-1) PB mode

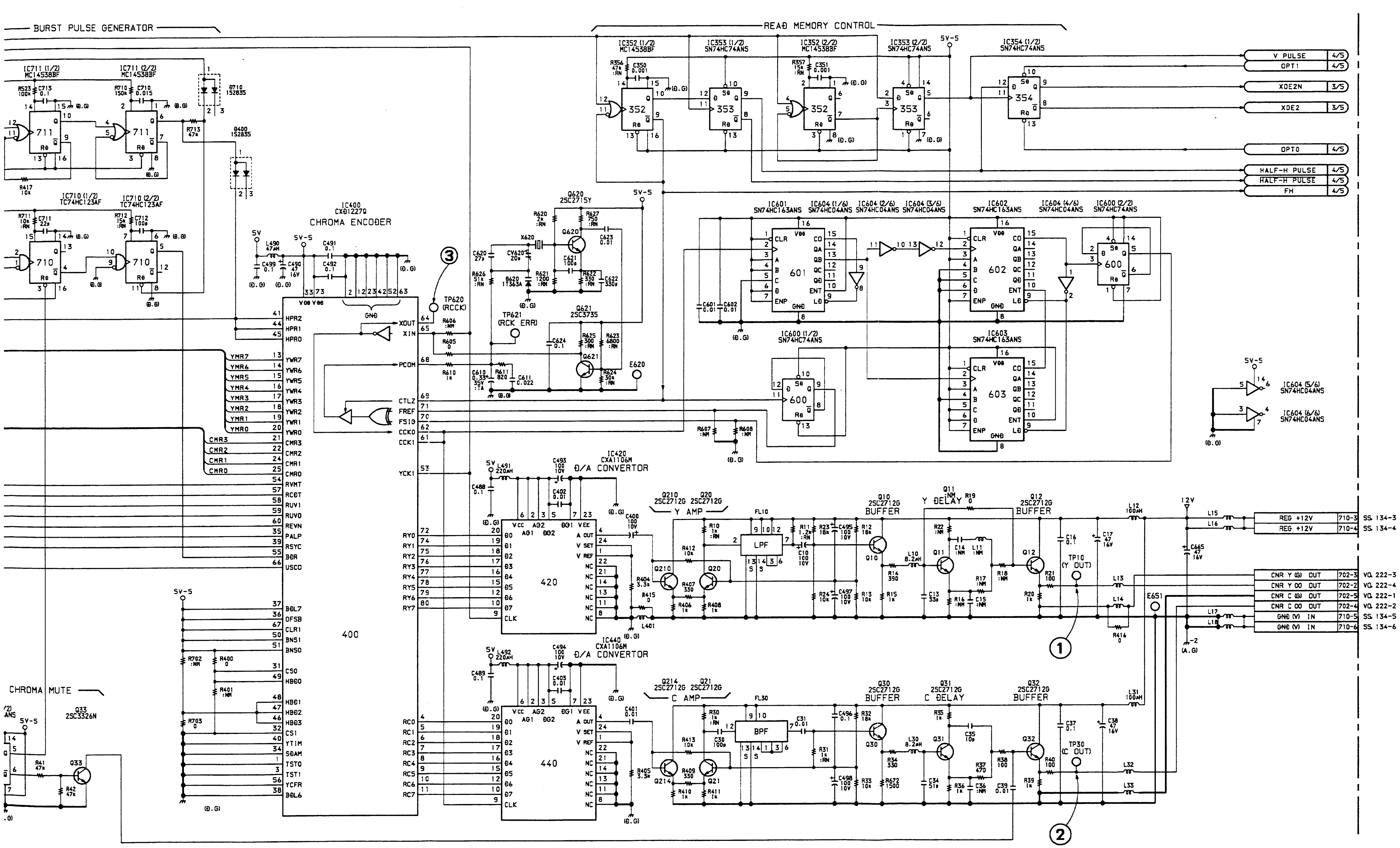


③ TP620 (C-1)



Measurement Condition
PB mode: KRV-45HPS
STOP (E-E) mode: S-VHS


BURST PULSE GENERATOR
READ MEMORY CONTROL
CRSYN
YRCK
OPT2
YINC
HPR2
YMR
CMR
RVMT
RCBT
RUVI
RUVO
REVN
PALP
RSYC
CHROMA EXIST
XMWE
Q710 DTC144EK
IC711 (1/2) MC14538BF
IC711 (2/2) MC14538BF
IC710 (1/2) TC74HC123AF
IC710 (2/2) TC74HC123AF
D710 1SS355
D400 1SS355
IC400 CXD1227Q
CHROMA ENCODER
GND
XOUT
XIN
PCOM
CTLZ
FREF
FSIG
CCKO
CCK1
YCK1
CHROMA MUTE
IC354 (2/2) SN74HC74ANS
Q33 2SC3326N
③ TP620 (RCCK)
TP621 (RCK ERR)
Q620 2SC2715Y
Q621 2SC3735
X620
E620
IC352 (1/2) MC14538BF
IC353 (1/2) SN74HC74ANS
IC352 (2/2) MC14538BF
IC353 (2/2) SN74HC74ANS
IC601 SN74HC163ANS
IC604 (1/6) SN74HC04ANS
IC604 (2/6) SN74HC04ANS
IC604 (3/6) SN74HC04ANS
IC600 (1/2) SN74HC74ANS
IC420 CXA1106M
D/A CONVERTOR
IC440 CXA1106M
D/A CONVERTOR
Q210 2SC2712G
Q20 2SC2712G
Y AMP
FL10
LPF
Q10 2SC2712G
BUFFER
Q11
Y DELAY
Q214 2SC2712G
Q21 2SC2712G
C AMP
FL30
BPF
Q30 2SC2712G
BUFFER
Q31 2SC2712G
C DELAY
SV-5
5V


BURST PULSE GENERATOR
IC711 (1/2) MC14538BF
IC711 (2/2) MC14538BF
IC710 (1/2) TC74HC123AF
IC710 (2/2) TC74HC123AF
IC400 CXD1227Q CHROMA ENCODER
READ MEMORY CONTROL
IC352 (1/2) MC14538BF
IC353 (1/2) SN74HC74ANS
IC352 (2/2) MC14538BF
IC353 (2/2) SN74HC74ANS
IC354 (1/2) SN74HC74ANS
V PULSE
OPT1
XOE2N
XOE2
OPTO
HALF-H PULSE
HALF-H PULSE
FH
IC601 SN74HC163ANS
IC602 SN74HC163ANS
IC603 SN74HC163ANS
IC600 (1/2) SN74HC74ANS
IC600 (2/2) SN74HC74ANS
IC604 SN74HC04ANS
Q620 2SC2715Y
Q621 2SC3735
TP620 (RCCK)
TP621 (RCK ERR)
E620
③
IC420 CXA1106M D/A CONVERTOR
IC440 CXA1106M D/A CONVERTOR
Q210 2SC2712G
Q20 2SC2712G
Y AMP
Q214 2SC2712G
Q21 2SC2712G
C AMP
LPF
BPF
Q10 2SC2712G BUFFER
Q11 Y DELAY
Q12 2SC2712G BUFFER
Q30 2SC2712G BUFFER
Q31 2SC2712G C DELAY
Q32 2SC2712G BUFFER
TP10 (Y OUT)
TP30 (C OUT)
E651
①
②
CHROMA MUTE
Q33 2SC3326N
REG +12V
REG +12V
CNR Y (G) OUT
CNR Y (0) OUT
CNR C (G) OUT
CNR C (0) OUT
GND (V) IN
GND (V) IN
710-3 SS 134-3
710-4 SS 134-4
702-3 VG 222-3
702-2 VG 222-4
702-5 VG 222-1
702-4 VG 222-2
710-5 SS 134-5
710-6 SS 134-6
400
420
440

VM-12P (5/5)

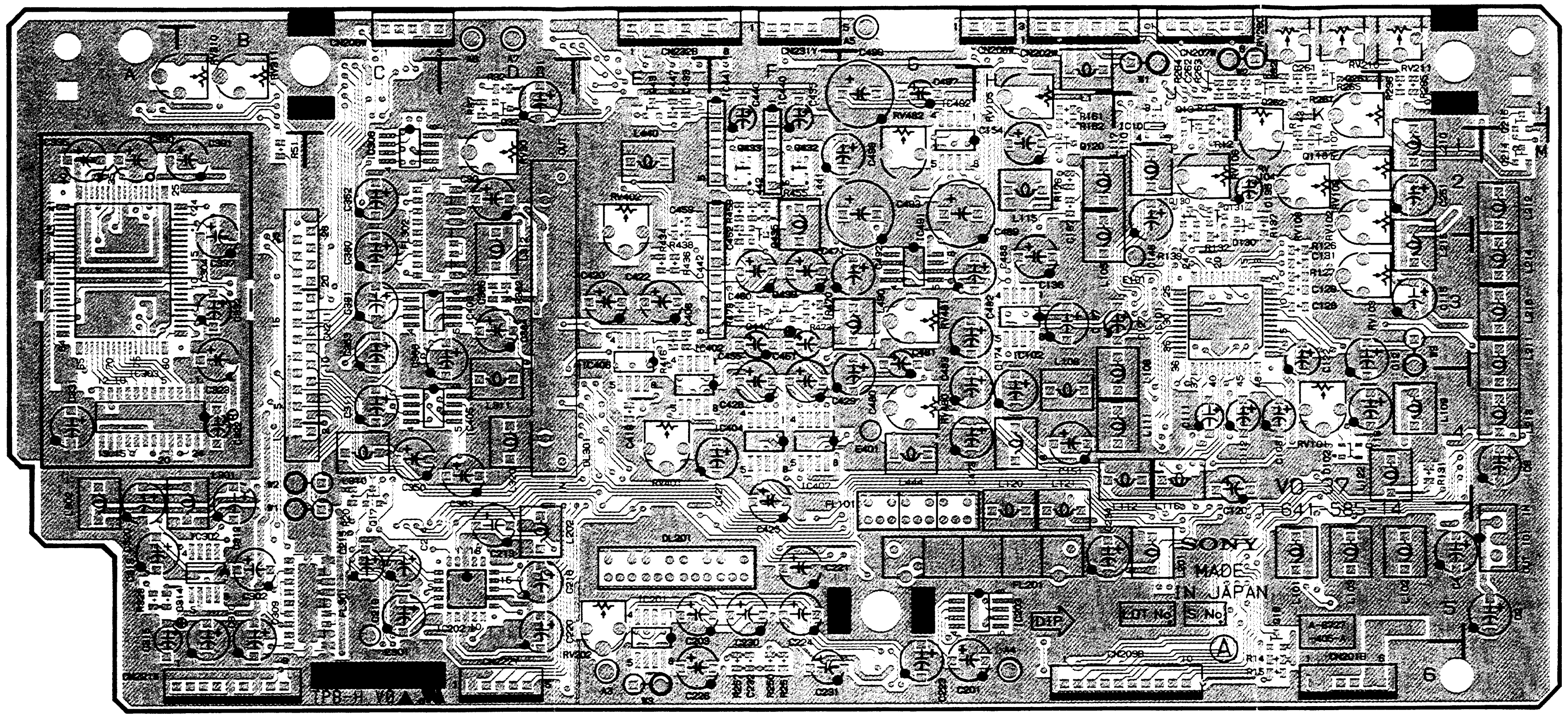
1-641-576-15, 16 (1)
SVO-9500MDP

VO-37A ; Y PROCESS, VIDEO OUTPUT PROCESS S/N 14891 and higher (EK)

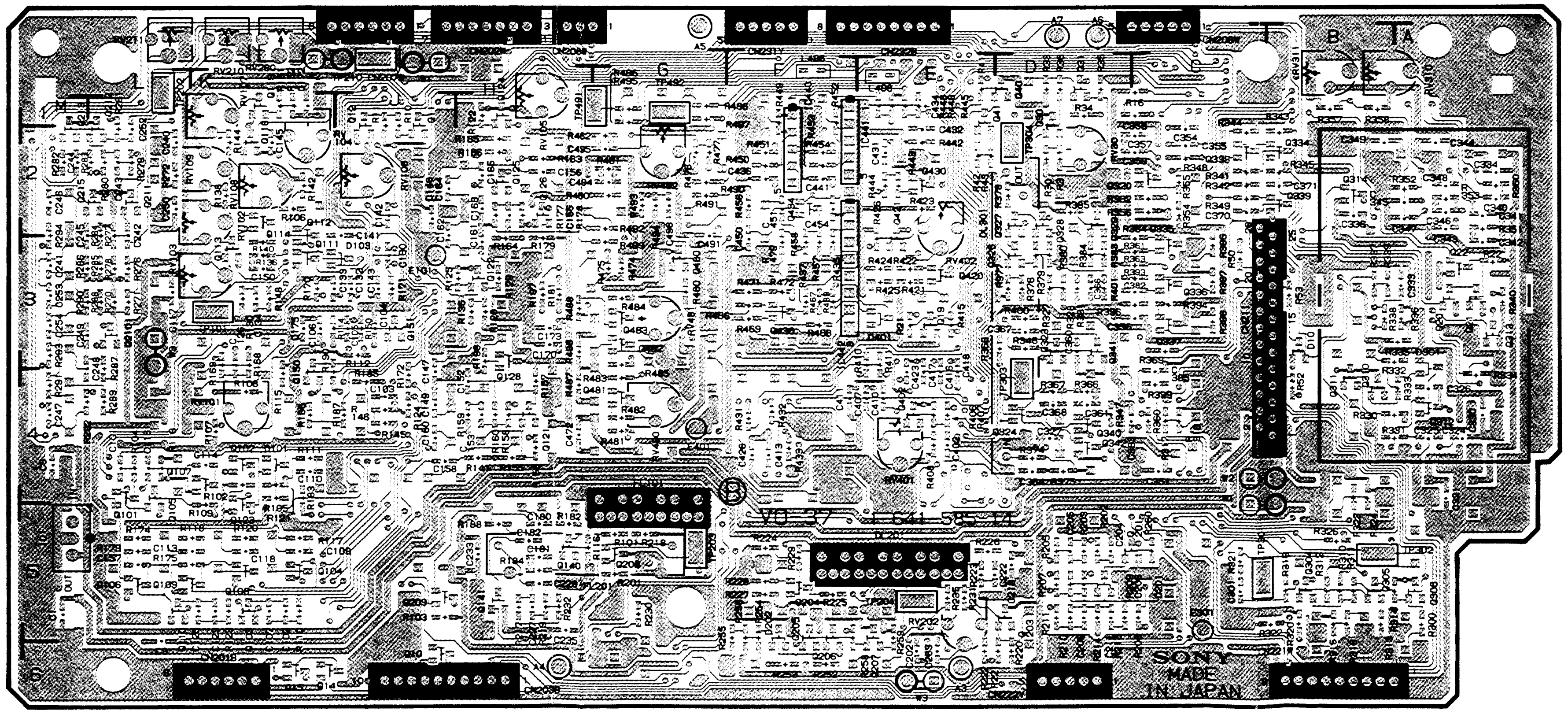
VO-37A (1-641-585-14)

CN201	K-6
CN202	H-1
CN203	H-6
CN206	C-1
CN207	J-1
CN208	H-1
CN211	B-4
CN221	B-6
CN222	D-6
CN231	F-1
CN232	E-1
DL201	E-5
DL301	D-3
D10	B-3 *
D101	K-4 *
D102	K-4
D103	J-3 *
D130	K-2
D201	D-5 *
D202	F-5 *
D301	A-3 *
D401	E-3 *
E101	J-3
E301	C-5
E401	G-4
FL101	G-5
FL201	H-5
FL301	C-5
FL302	C-2
IC1	M-5
IC10	J-1
IC101	J-3
IC102	H-3
IC201	E-5
IC202	D-5
IC203	G-5
IC302	B-5
IC303	B-4
IC304	A-3
IC306	C-2
IC402	E-3
IC403	C-3
IC404	F-4
IC405	C-4
IC406	E-3
IC407	F-4
IC440	F-1
IC491	G-3
IC492	G-1
Q10	J-6 *
Q11	J-1 *
Q12	J-1 *
Q13	J-1
Q14	K-6 *
Q15	K-6 *
Q16	K-5
Q17	C-4
Q19	E-3 *
Q20	A-3 *
Q21	A-3 *
Q22	A-3 *
Q30	D-1 *
Q31	D-1 *
Q32	D-1
Q40	D-1 *
Q41	E-1 *
Q101	L-4 *
Q102	K-4 *
Q103	K-5 *
Q104	K-5 *
Q105	L-4 *
Q106	L-5 *
Q107	K-4 *
Q108	K-5 *
Q109	K-5 *
Q110	L-5 *
Q111	K-3 *
Q112	K-2 *
Q113	K-3 *
Q114	K-2 *
Q116	K-2 *
Q118	K-2
Q119	K-1 *
Q120	H-2
Q121	H-4 *
Q122	H-3 *
Q123	K-5 *
Q124	H-1 *
Q125	H-2 *
Q126	H-2 *
Q128	H-3 *
Q130	J-2
Q131	J-2
Q140	H-5 *
Q141	H-5 *
Q150	K-4 *
Q151	J-3 *
Q201	D-5 *
Q203	D-5 *
Q204	F-5 *
Q205	F-5 *
Q206	F-5 *
Q207	E-5 *
Q208	G-5 *
Q209	J-5 *
Q210	L-3 *
Q211	L-2 *
Q212	L-2 *
Q213	M-2 *
Q214	M-2
Q215	L-2 *
Q216	M-1
Q261	K-1
Q262	K-1
Q304	B-5 *
Q305	B-5 *
Q306	A-5 *
Q310	B-4 *
Q311	B-4 *
Q312	A-4 *
Q313	A-3 *
Q314	B-2 *
Q320	C-2 *
Q323	D-3 *
Q324	D-4 *
Q326	D-3 *
Q327	D-2 *
Q328	D-2 *
Q329	D-2 *
Q333	C-2 *
Q334	B-2 *
Q335	C-3 *
Q336	C-3 *
Q337	C-3 *
Q339	B-2 *
Q341	D-3 *
Q402	E-4 *
Q420	E-3 *
Q421	E-3 *
Q430	E-2 *
Q431	E-1
Q432	F-2
Q433	F-2
Q434	F-2 *
Q435	F-2
Q438	F-3 *
Q439	F-3
Q440	F-3
Q480	G-3 *
Q481	G-4 *
Q482	G-3 *
Q483	G-3 *
RV30	D-2
RV101	K-4
RV102	K-2
RV103	K-3
RV104	K-2
RV105	H-1
RV106	J-2
RV107	K-1
RV108	K-2
RV109	K-2
RV202	E-5
RV210	K-1
RV211	L-1
RV260	K-1
RV310	B-1
RV311	B-1
RV401	E-4
RV402	E-2
RV480	G-4
RV481	G-3
RV482	G-2
TP101	K-3 *
TP201	E-5 *
TP202	L-1 *
TP203	G-5 *
TP210	J-1 *
TP301	C-5 *
TP302	B-5 *
TP303	D-4 *
TP304	D-2 *
TP491	G-1 *
TP492	G-1 *

* mark ; B SIDE mount



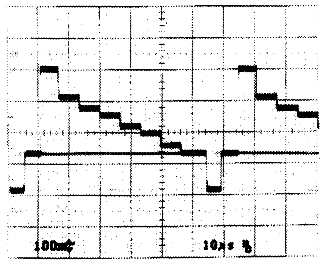
VO-37/A — A SIDE —
1-641-585-14 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP



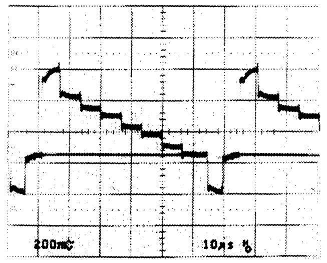
VO-37/A — B SIDE —
1-641-585-14 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

VO-37A (1/3) ; Y PROCESS

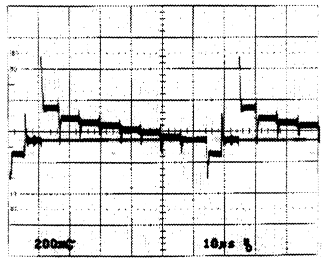
① TP203 (G-5*) STOP (E-E) mode



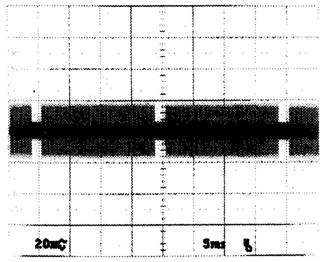
② TP201 (E-5*) STOP (E-E) mode



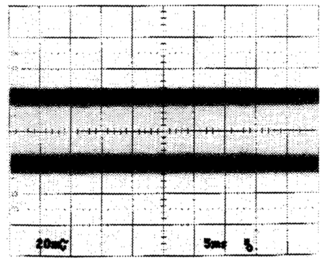
③ TP101 (K-3*) STOP (E-E) mode



④ TP210 (J-1*) STOP (E-E) mode

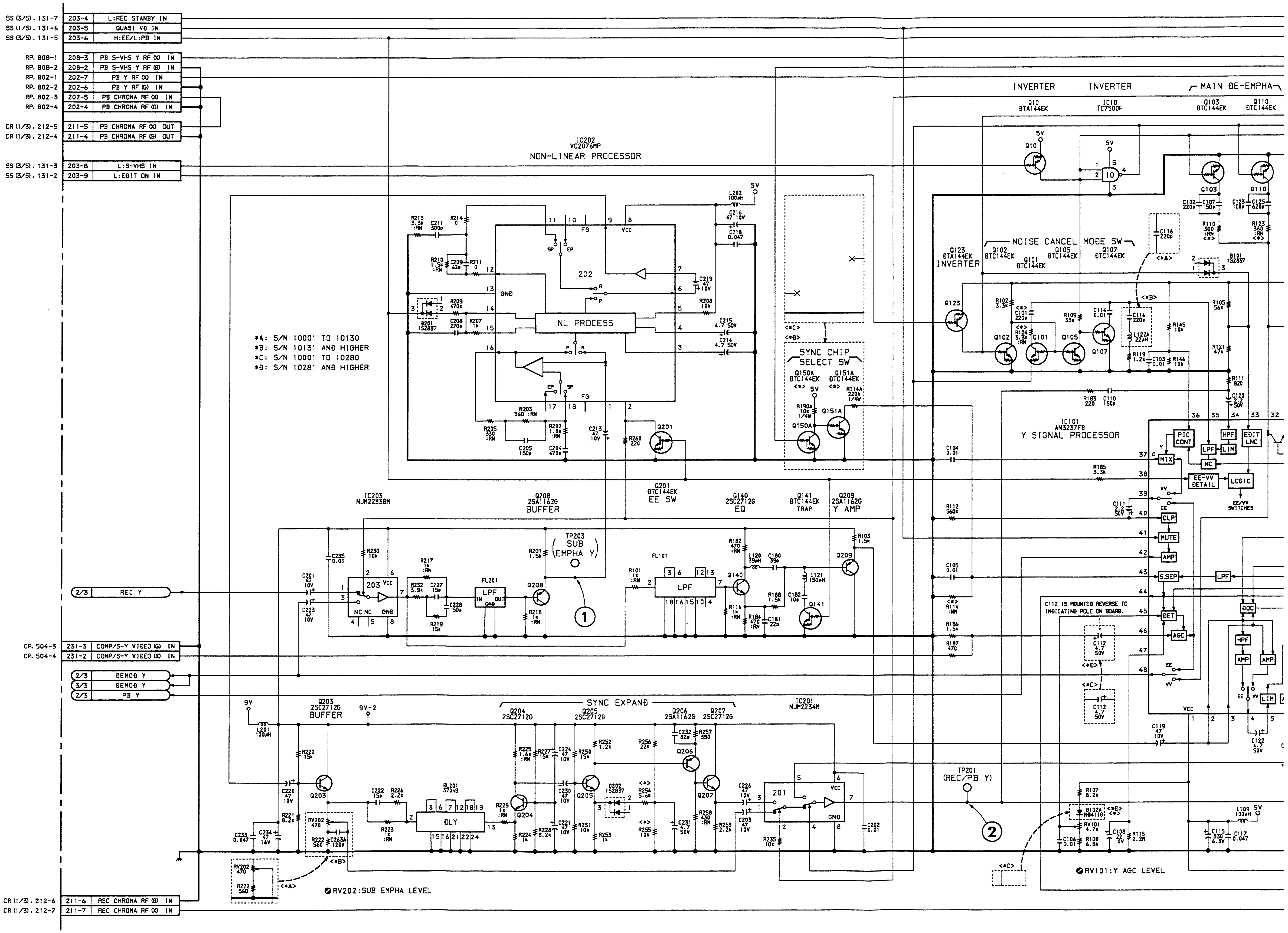


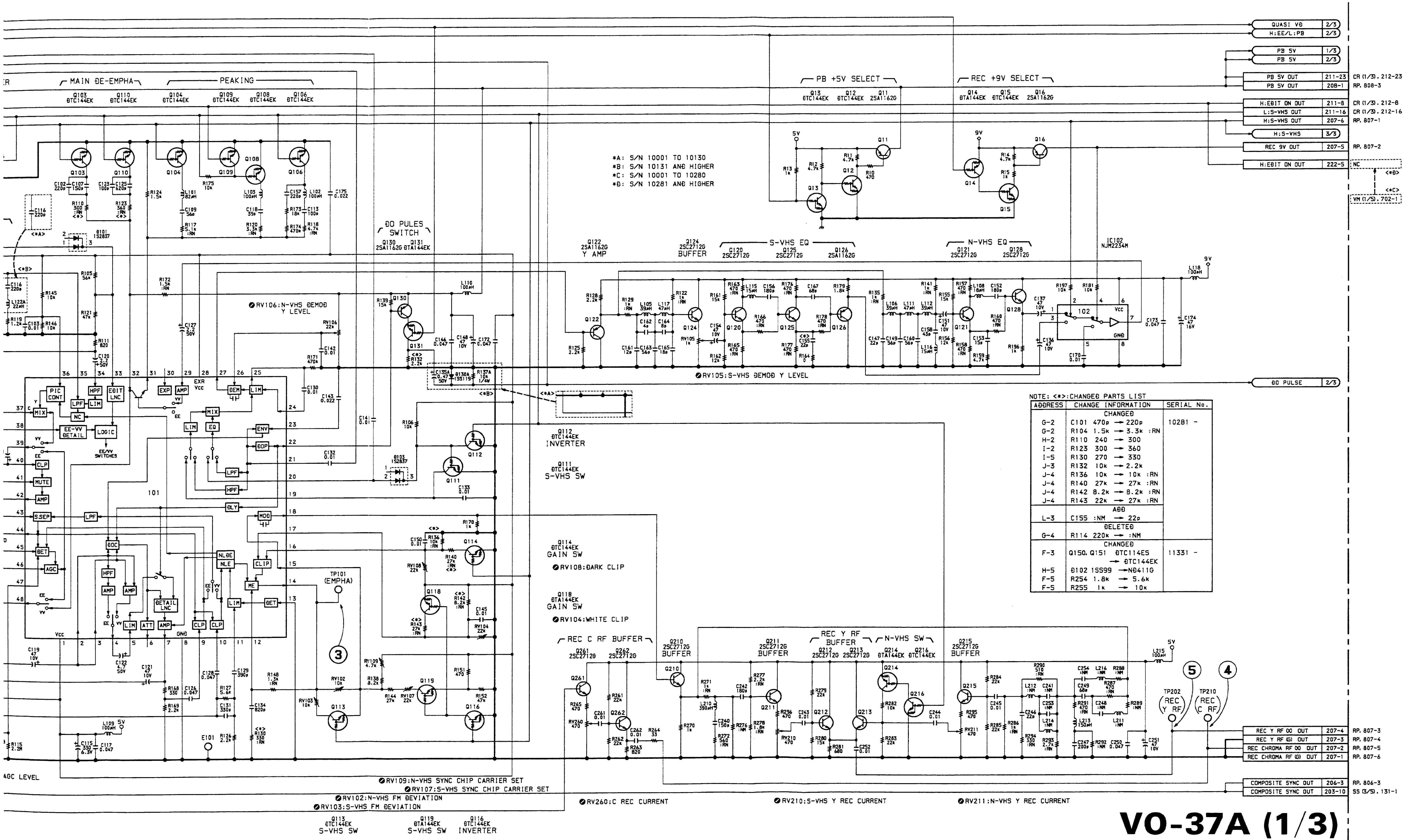
⑤ TP202 (L-1*) STOP (E-E) mode



Measurement Condition
S-VIDEO IN: 75% color bars
STOP (E-E) mode: S-VHS

* mark; B SIDE mount


SS (3/5). 131-7 | 203-4 | L:REC STANBY IN
SS (1/5). 131-6 | 203-5 | QUASI VD IN
SS (3/5). 131-5 | 203-6 | H:EE/L:PB IN
RP. 808-1 | 208-3 | PB S-VHS Y RF (X) IN
RP. 808-2 | 208-2 | PB S-VHS Y RF (G) IN
RP. 802-1 | 202-7 | PB Y RF (X) IN
RP. 802-2 | 202-6 | PB Y RF (G) IN
RP. 802-3 | 202-5 | PB CHROMA RF (X) IN
RP. 802-4 | 202-4 | PB CHROMA RF (G) IN
CR (1/3). 212-5 | 211-5 | PB CHROMA RF (X) OUT
CR (1/3). 212-4 | 211-4 | PB CHROMA RF (G) OUT
SS (3/5). 131-3 | 203-8 | L:S-VHS IN
SS (3/5). 131-2 | 203-9 | L:EDIT ON IN
2/3 REC Y
CP. 504-3 | 231-3 | COMP/S-Y VIDEO (G) IN
CP. 504-4 | 231-2 | COMP/S-Y VIDEO (X) IN
2/3 DEMOD Y
3/3 DEMOD Y
2/3 PB Y
CR (1/3). 212-6 | 211-6 | REC CHROMA RF (G) IN
CR (1/3). 212-7 | 211-7 | REC CHROMA RF (X) IN
IC202 VC2076MP NON-LINEAR PROCESSOR
NL PROCESS
*A: S/N 10001 TO 10130
*B: S/N 10131 AND HIGHER
*C: S/N 10001 TO 10280
*D: S/N 10281 AND HIGHER
SYNC CHIP SELECT SW
Q150A DTC144EK
Q151A DTC144EK
IC203 NJM2233BM
Q208 2SA1162G BUFFER
TP203 (SUB EMPHA Y)
Q201 DTC144EK EE SW
Q140 2SC2712G EQ
Q141 DTC144EK TRAP
Q209 2SA1162G Y AMP
FL201 LPF
FL101 LPF
9V
9V-2
Q203 2SC2712G BUFFER
SYNC EXPAND
Q204 2SC2712G
Q205 2SC2712G
Q206 2SA1162G
Q207 2SC2712G
IC201 NJM2234M
DL201 DLY
TP201 (REC/PB Y)
RV202:SUB EMPHA LEVEL
INVERTER
Q10 DTA144EK
IC10 TC7S00F
MAIN DE-EMPHA
Q103 DTC144EK
Q110 DTC144EK
Q123 DTA144EK INVERTER
NOISE CANCEL MODE SW
Q102 DTC144EK
Q101 DTC144EK
Q105 DTC144EK
Q107 DTC144EK
IC101 AN3237FB Y SIGNAL PROCESSOR
PIC CONT
HPF
EDIT LNC
LPF
LIM
NC
MIX
EE-VV DETAIL
LOGIC
EE/VV SWITCHES
CLP
MUTE
AMP
S.SEP
DET
AGC
C112 IS MOUNTED REVERSE TO INDICATING POLE ON BOARD.
RV101:Y AGC LEVEL
5V
①
②


MAIN DE-EMPHA
PEAKING
Q103 DTC144EK
Q110 DTC144EK
Q104 DTC144EK
Q109 DTC144EK
Q108 DTC144EK
Q106 DTC144EK
PB +5V SELECT
Q13 DTC144EK
Q12 DTC144EK
Q11 2SA1162G
REC +9V SELECT
Q14 DTA144EK
Q15 DTC144EK
Q16 2SA1162G
DD PULES SWITCH
Q130 2SA1162G
Q131 DTA144EK
Q122 2SA1162G Y AMP
Q124 2SC2712G BUFFER
S-VHS EQ
Q120 2SC2712G
Q125 2SC2712G
Q126 2SA1162G
N-VHS EQ
Q121 2SC2712G
Q128 2SC2712G
IC102 NJM2234M
RV106:N-VHS DEMOD Y LEVEL
RV105:S-VHS DEMOD Y LEVEL
Q112 DTC144EK INVERTER
Q111 DTC144EK S-VHS SW
Q114 DTC144EK GAIN SW
RV108:DARK CLIP
Q118 DTA144EK GAIN SW
RV104:WHITE CLIP
TP101 (EMPHA)
101
REC C RF BUFFER
Q261 2SC2712G
Q262 2SC2712G
Q210 2SC2712G BUFFER
REC Y RF BUFFER
Q211 2SC2712G BUFFER
Q212 2SC2712G
Q213 2SC2712G
N-VHS SW
Q214 DTA144EK
Q216 DTC144EK
Q215 2SC2712G BUFFER
TP202 (REC Y RF)
TP210 (REC C RF)
③
⑤
④
QUASI VD 2/3
H:EE/L:PB 2/3
PB 5V 1/3
PB 5V 2/3
PB 5V OUT 211-23 CR (1/3). 212-23
PB 5V OUT 208-1 RP. 808-3
H:EDIT ON OUT 211-8 CR (1/3). 212-8
L:S-VHS OUT 211-16 CR (1/3). 212-16
H:S-VHS OUT 207-6 RP. 807-1
H:S-VHS 3/3
REC 9V OUT 207-5 RP. 807-2
H:EDIT ON OUT 222-5 NC
<*D>
<*C>
VM (1/5). 702-1
DD PULSE 2/3
REC Y RF (X) OUT 207-4 RP. 807-3
REC Y RF (G) OUT 207-3 RP. 807-4
REC CHROMA RF (X) OUT 207-2 RP. 807-5
REC CHROMA RF (G) OUT 207-1 RP. 807-6
COMPOSITE SYNC OUT 206-3 RP. 806-3
COMPOSITE SYNC OUT 203-10 SS (3/5). 131-1
AGC LEVEL
RV109:N-VHS SYNC CHIP CARRIER SET
RV107:S-VHS SYNC CHIP CARRIER SET
RV102:N-VHS FM DEVIATION
RV103:S-VHS FM DEVIATION
RV260:C REC CURRENT
RV210:S-VHS Y REC CURRENT
RV211:N-VHS Y REC CURRENT
Q113 DTC144EK S-VHS SW
Q119 DTA144EK S-VHS SW
Q116 DTC144EK INVERTER
1
2
3
4
5

*A: S/N 10001 TO 10130
*B: S/N 10131 AND HIGHER
*C: S/N 10001 TO 10280
*D: S/N 10281 AND HIGHER

NOTE: <*>:CHANGED PARTS LIST

ADDRESS	CHANGE INFORMATION	SERIAL No.
	CHANGED	
G-2	C101 470p → 220p	10281 -
G-2	R104 1.5k → 3.3k :RN	
H-2	R110 240 → 300	
I-2	R123 300 → 360	
I-5	R130 270 → 330	
J-3	R132 10k → 2.2k	
J-4	R136 10k → 10k :RN	
J-4	R140 27k → 27k :RN	
J-4	R142 8.2k → 8.2k :RN	
J-4	R143 22k → 27k :RN	
	ADD	
L-3	C155 :NM → 22p	
	DELETED	
G-4	R114 220k → :NM	
	CHANGED	
F-3	Q150, Q151 DTC114ES → DTC144EK	11331 -
H-5	D102 1SS99 → ND411G	
F-5	R254 1.8k → 5.6k	
F-5	R255 1k → 10k	

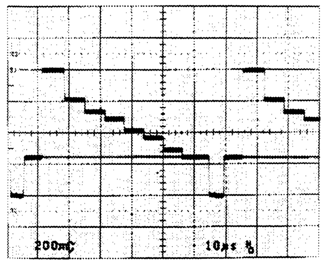
VO-37A (1/3)

1-641-585-12, 13, 14 (2)
SVO-9500MDP

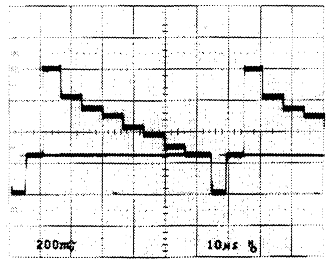
VO-37A (2/3)

VO-37A (2/3); DIGITAL Y/C SEPARATOR, PB Y/C OUTPUT

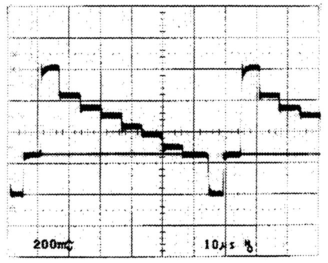
① TP301 (C-5*) STOP (E-E) mode



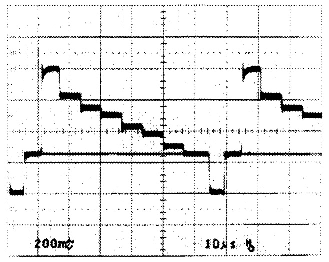
③ TP303 (D-4*) STOP (E-E) mode



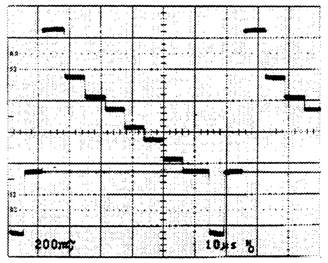
TP301 (C-5*) PB mode



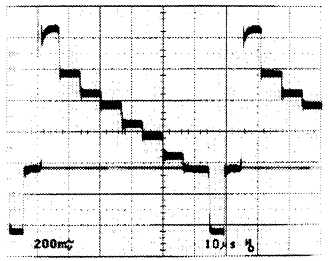
TP303 (D-4*) PB mode



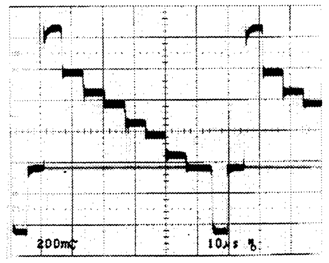
② TP302 (A-5*) STOP (E-E) mode



④ TP304 (D-2*) PB mode



TP302 (A-5*) PB mode



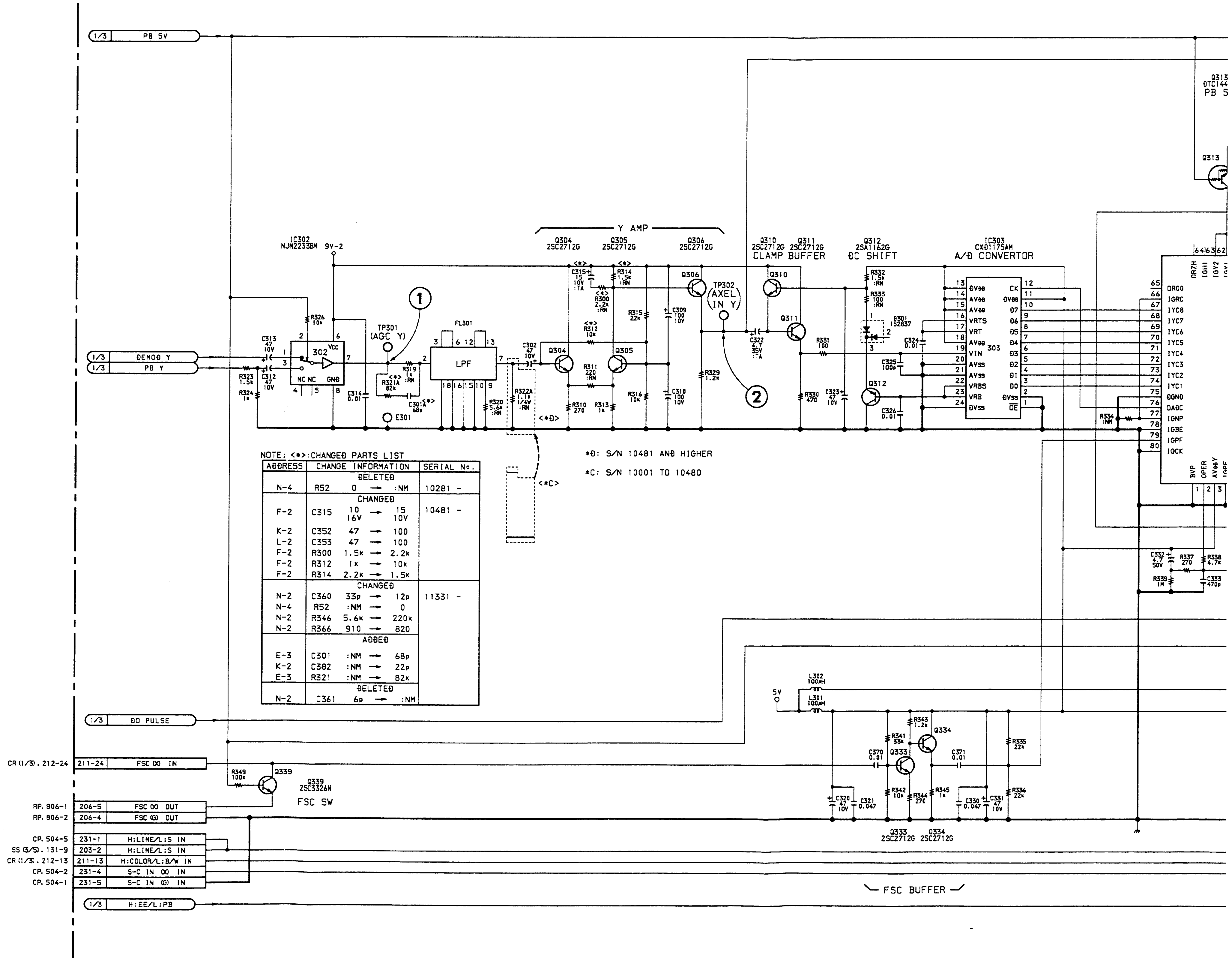
Measurement Condition

S-VIDEO IN: 75% color bars

STOP (E-E) mode: S-VHS

PB mode: KRV-45HPS

* mark; B SIDE mount


1/3
PB 5V
DEMOD Y
PB Y
DD PULSE
FSC DD IN
FSC DD OUT
FSC (G) OUT
H:LINE/L:S IN
H:COLOR/L:B/W IN
S-C IN DD IN
S-C IN (G) IN
H:EE/L:PB
CR (1/3). 212-24
211-24
RP. 806-1
RP. 806-2
206-5
206-4
CP. 504-5
SS (3/3). 131-9
CR (1/3). 212-13
CP. 504-2
CP. 504-1
231-1
203-2
211-13
231-4
231-5
IC302
NJM2233BM
9V-2
302
TP301
(AGC Y)
①
FL301
LPF
E301
Y AMP
Q304
2SC2712G
Q305
2SC2712G
Q306
2SC2712G
TP302
(AXEL)
(IN Y)
②
Q310
2SC2712G
Q311
2SC2712G
CLAMP BUFFER
Q312
2SA1162G
DC SHIFT
IC303
CXD1175AM
A/D CONVERTOR
303
Q313
DTC144
PB S
Q339
2SC3326N
FSC SW
Q333
2SC2712G
Q334
2SC2712G
FSC BUFFER
5V
L302
100µH
L301
100µH
<*D>
<*C>

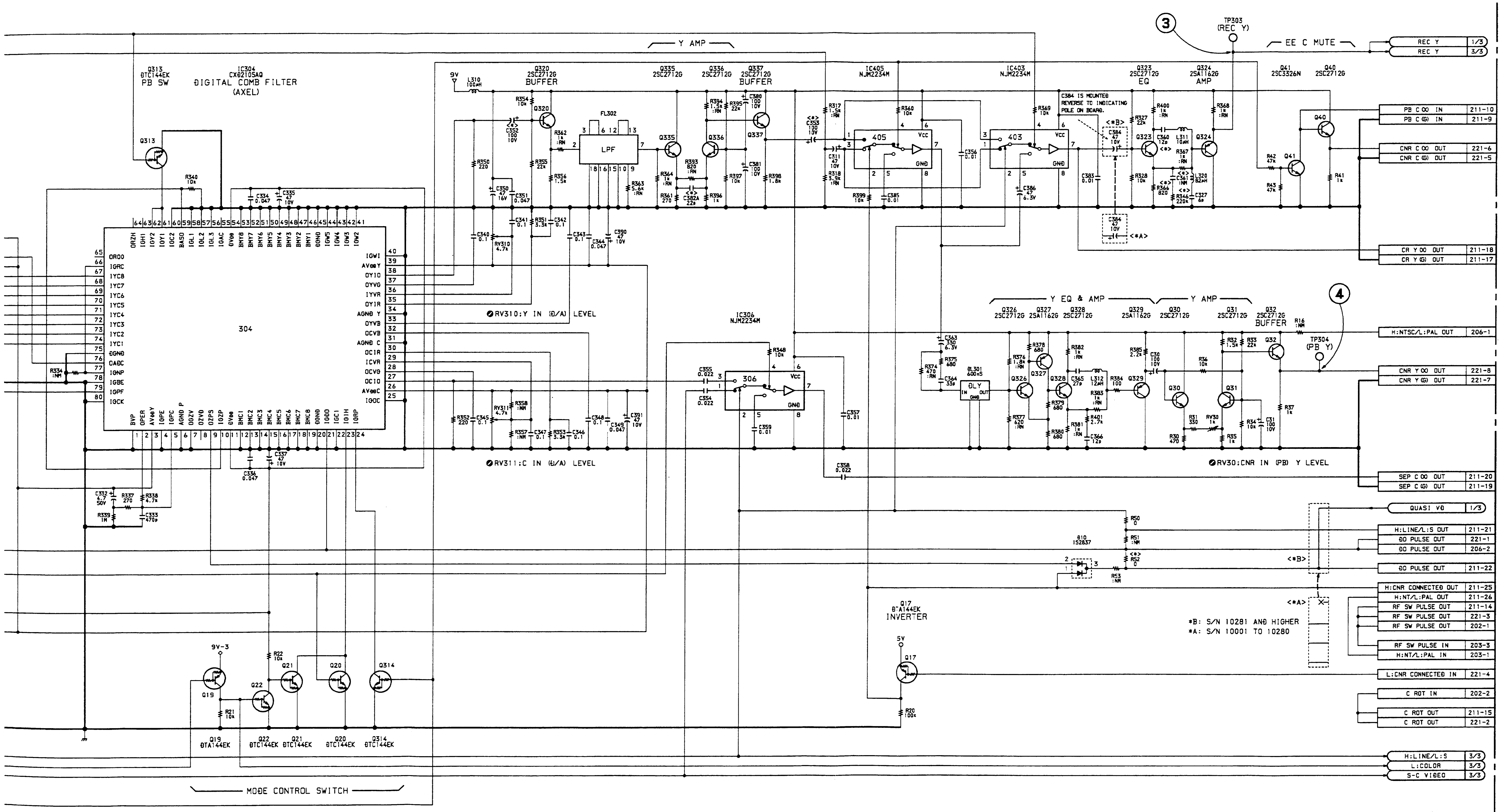
*D: S/N 10481 AND HIGHER

*C: S/N 10001 TO 10480

NOTE: <*>:CHANGED PARTS LIST

ADDRESS	CHANGE INFORMATION	SERIAL No.
	DELETED	
N-4	R52 0 → :NM	10281 -
	CHANGED	
F-2	C315 10 16V → 15 10V	10481 -
K-2	C352 47 → 100	
L-2	C353 47 → 100	
F-2	R300 1.5k → 2.2k	
F-2	R312 1k → 10k	
F-2	R314 2.2k → 1.5k	
	CHANGED	
N-2	C360 33p → 12p	11331 -
N-4	R52 :NM → 0	
N-2	R346 5.6k → 220k	
N-2	R366 910 → 820	
	ADDED	
E-3	C301 :NM → 68p	
K-2	C382 :NM → 22p	
E-3	R321 :NM → 82k	
	DELETED	
N-2	C361 6p → :NM	

13-29


Y AMP
EE C MUTE
TP303 (REC Y)
③
④
TP304 (PB Y)
Q313 DTC144EK PB SW
IC304 CXD2105AQ DIGITAL COMB FILTER (AXEL)
304
Q320 2SC2712G BUFFER
FL302 LPF
Q335 2SC2712G
Q336 2SC2712G
Q337 2SC2712G BUFFER
IC405 NJM2234M
405
IC403 NJM2234M
403
C384 IS MOUNTED REVERSE TO INDICATING POLE ON BOARD.
Q323 2SC2712G EQ
Q324 2SA1162G AMP
Q41 2SC3326N
Q40 2SC2712G
RV310:Y IN (D/A) LEVEL
RV311:C IN (D/A) LEVEL
IC306 NJM2234M
306
Y EQ & AMP
Q326 2SC2712G
Q327 2SA1162G
Q328 2SC2712G
Q329 2SA1162G
Y AMP
Q30 2SC2712G
Q31 2SC2712G
Q32 2SC2712G BUFFER
DL301 600nS DLY
RV30:CNR IN (PB) Y LEVEL
D10 1SS237
Q17 DTA144EK INVERTER
Q19 DTA144EK
Q22 DTC144EK
Q21 DTC144EK
Q20 DTC144EK
Q314 DTC144EK
MODE CONTROL SWITCH
*B: S/N 10281 AND HIGHER
*A: S/N 10001 TO 10280
<*A>
<*B>
REC Y 1/3
REC Y 3/3
PB C(X) IN 211-10 CR (3/3), 212-10
PB C(G) IN 211-9 CR (3/3), 212-9
CNR C(X) OUT 221-6 VM (1/3), 701-4
CNR C(G) OUT 221-5 VM (1/3), 701-5
CR Y(X) OUT 211-18 CR (1/3), 212-18
CR Y(G) OUT 211-17 CR (1/3), 212-17
H:NTSC/L:PAL OUT 206-1 RP, 806-5
CNR Y(X) OUT 221-8 VM (1/3), 701-2
CNR Y(G) OUT 221-7 VM (1/3), 701-3
SEP C(X) OUT 211-20 CR (1/3), 212-20
SEP C(G) OUT 211-19 CR (1/3), 212-19
QUASI VD 1/3
H:LINE/L:S OUT 211-21 CR (1/3), 212-21
BD PULSE OUT 221-1 VM (2/3), 701-9
BD PULSE OUT 206-2 RP, 806-4
BD PULSE OUT 211-22 CR (1/3), 212-22
H:CNR CONNECTED OUT 211-25 CR (1/3), 212-25
H:NT/L:PAL OUT 211-26 CR (1/3), 212-26
RF SW PULSE OUT 211-14 CR (1/3), 212-14
RF SW PULSE OUT 221-3 VM (1/3), 701-7
RF SW PULSE OUT 202-1 RP, 802-7
RF SW PULSE IN 203-3 SS (1/3), 131-8
H:NT/L:PAL IN 203-1 SS (1/3), 131-10
L:CNR CONNECTED IN 221-4 VM (1/3), 701-6
C ROT IN 202-2 RP, 802-6
C ROT OUT 211-15 CR (1/3), 212-15
C ROT OUT 221-2 VM (1/3), 701-8
H:LINE/L:S 3/3
L:COLOR 3/3
S-C VIDEO 3/3
9V
9V-3
5V

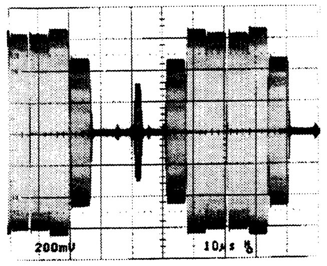
VO-37A (2/3)

1-641-585-12, 13, 14 (2)
SVO-9500MDP

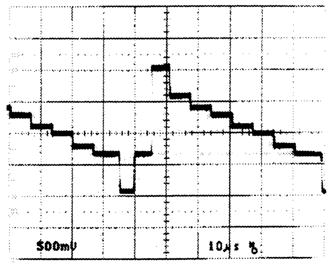
VO-37A (3/3); YX FILTER, Y/C MIX, VIDEO/S-VIDEO OUTPUT
DUS-592

S/N 11331 and higher (EK)

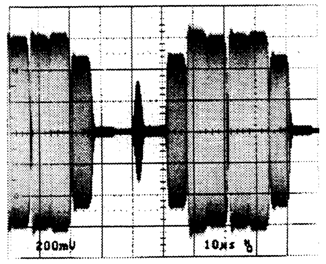
① TP491 (H-1 *) STOP (E-E) mode



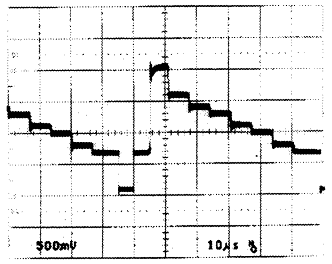
② TP492 (G-1 *) STOP (E-E) mode



TP491 (H-1 *) PB mode



TP492 (G-1 *) PB mode



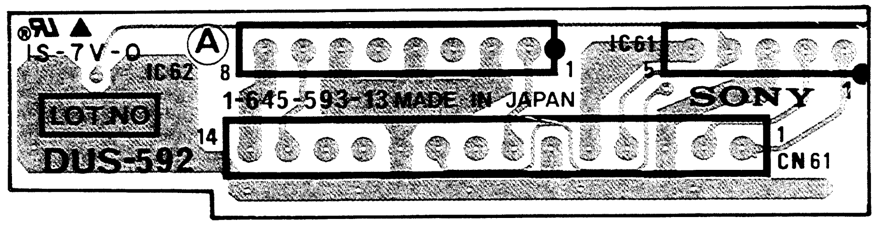
Measurement Condition

S-VIDEO IN: 75% color bars

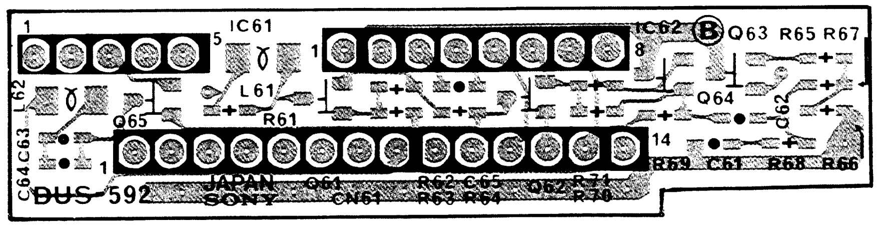
STOP (E-E) mode: S-VHS

PB mode: KRV-45HPS

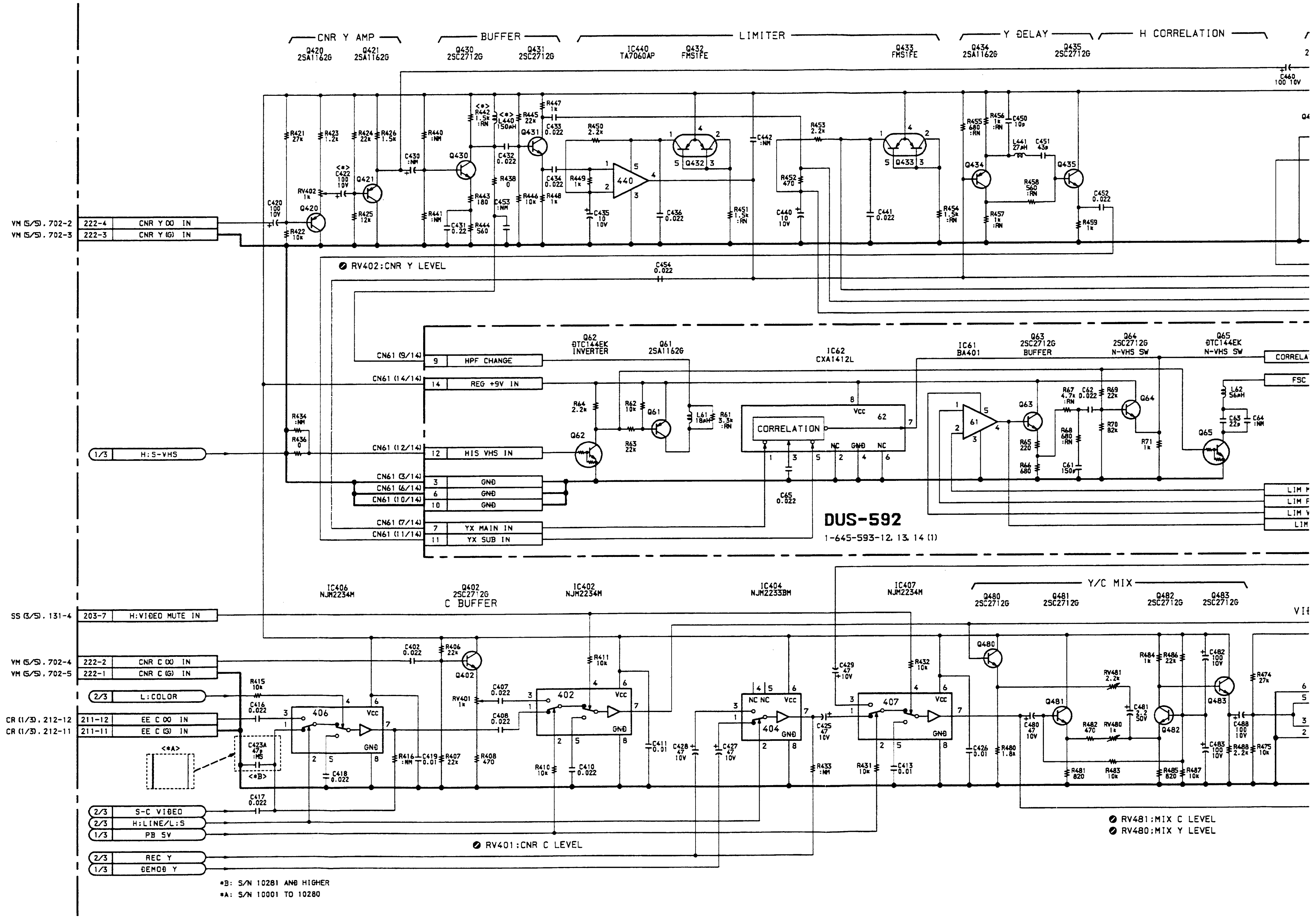
* mark; B SIDE mount

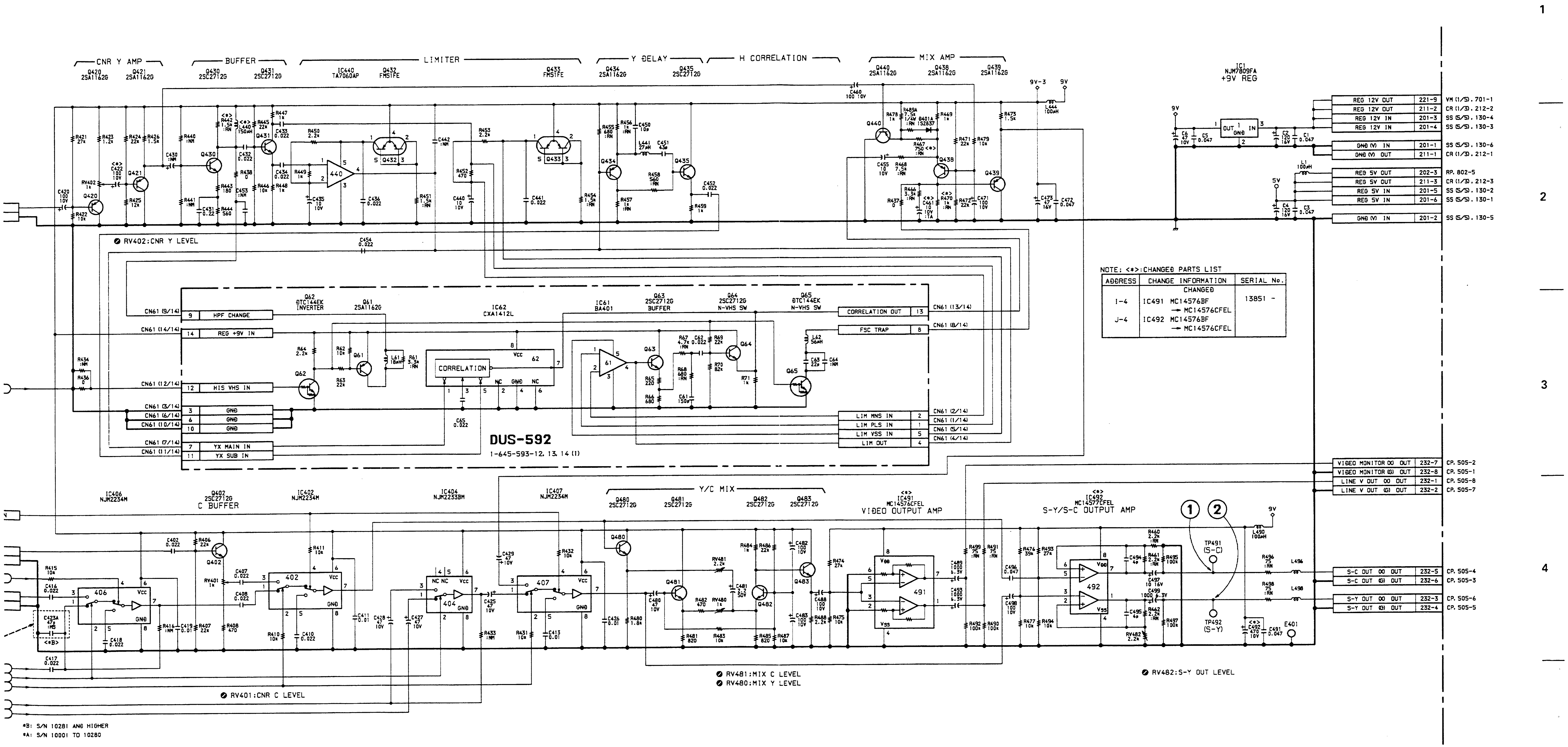

IS-7V-0
A
IC62
IC61
LOT NO
1-645-593-13 MADE IN JAPAN
SONY
DUS-592
CN61

DUS-592 — A SIDE —
1-645-593-12, 13, 14 (1)
SVO-9500MDP


IC61
IC62
B
Q63 R65 R67
L62
L61
Q64
Q65
R61
C62
C64 C63
DUS-592
JAPAN
SONY
R69 C61 R68 R66

DUS-592 — B SIDE —
1-645-593-12, 13, 14 (1)
SVO-9500MDP


CNR Y AMP
BUFFER
LIMITER
Y DELAY
H CORRELATION
Q420 2SA1162G
Q421 2SA1162G
Q430 2SC2712G
Q431 2SC2712G
IC440 TA7060AP
Q432 FMS1FE
Q433 FMS1FE
Q434 2SA1162G
Q435 2SC2712G
RV402:CNR Y LEVEL
VM (5/5). 702-2 222-4 CNR Y (X) IN
VM (5/5). 702-3 222-3 CNR Y (G) IN
Q62 DTC144EK INVERTER
Q61 2SA1162G
IC62 CXA1412L
IC61 BA4401
Q63 2SC2712G BUFFER
Q64 2SC2712G N-VHS SW
Q65 DTC144EK N-VHS SW
CN61 (9/14) 9 HPF CHANGE
CN61 (14/14) 14 REG +9V IN
(1/3) H:S-VHS
CN61 (12/14) 12 HIS VHS IN
CN61 (3/14) 3 GND
CN61 (6/14) 6 GND
CN61 (10/14) 10 GND
CN61 (7/14) 7 YX MAIN IN
CN61 (11/14) 11 YX SUB IN
CORRELATION
DUS-592
1-645-593-12, 13, 14 (1)
CORRELA
FSC
LIM
IC406 NJM2234M
Q402 2SC2712G C BUFFER
IC402 NJM2234M
IC404 NJM2233BM
IC407 NJM2234M
Y/C MIX
Q480 2SC2712G
Q481 2SC2712G
Q482 2SC2712G
Q483 2SC2712G
SS (3/5). 131-4 203-7 H:VIDEO MUTE IN
VM (5/5). 702-4 222-2 CNR C (X) IN
VM (5/5). 702-5 222-1 CNR C (G) IN
(2/3) L:COLOR
CR (1/3). 212-12 211-12 EE C (X) IN
CR (1/3). 212-11 211-11 EE C (G) IN
(2/3) S-C VIDEO
(2/3) H:LINE/L:S
(1/3) PB 5V
(2/3) REC Y
(1/3) DEMOD Y
RV401:CNR C LEVEL
RV481:MIX C LEVEL
RV480:MIX Y LEVEL
*B: S/N 10281 AND HIGHER
*A: S/N 10001 TO 10280


CNR Y AMP
Q420 2SA1162G
Q421 2SA1162G
BUFFER
Q430 2SC2712G
Q431 2SC2712G
LIMITER
IC440 TA7060AP
Q432 FMS1FE
Q433 FMS1FE
Y DELAY
Q434 2SA1162G
Q435 2SC2712G
H CORRELATION
MIX AMP
Q440 2SA1162G
Q438 2SA1162G
Q439 2SA1162G
IC1 NJM7809FA +9V REG
9V-3
9V
5V
RV402:CNR Y LEVEL
REG 12V OUT 221-9 VM (1/5). 701-1
REG 12V OUT 211-2 CR (1/3). 212-2
REG 12V IN 201-3 SS (5/5). 130-4
REG 12V IN 201-4 SS (5/5). 130-3
GND (V) IN 201-1 SS (5/5). 130-6
GND (V) OUT 211-1 CR (1/3). 212-1
REG 5V OUT 202-3 RP. 802-5
REG 5V OUT 211-3 CR (1/3). 212-3
REG 5V IN 201-5 SS (5/5). 130-2
REG 5V IN 201-6 SS (5/5). 130-1
GND (V) IN 201-2 SS (5/5). 130-5
Q62 DTC144EK INVERTER
Q61 2SA1162G
IC62 CXA1412L
CORRELATION
IC61 BA401
Q63 2SC2712G BUFFER
Q64 2SC2712G N-VHS SW
Q65 DTC144EK N-VHS SW
CN61 (9/14) 9 HPF CHANGE
CN61 (14/14) 14 REG +9V IN
CN61 (12/14) 12 HIS VHS IN
CN61 (3/14) 3 GND
CN61 (6/14) 6 GND
CN61 (10/14) 10 GND
CN61 (7/14) 7 YX MAIN IN
CN61 (11/14) 11 YX SUB IN
CORRELATION OUT 13 CN61 (13/14)
FSC TRAP 8 CN61 (8/14)
LIM MNS IN 2 CN61 (2/14)
LIM PLS IN 1 CN61 (1/14)
LIM VSS IN 5 CN61 (5/14)
LIM OUT 4 CN61 (4/14)
DUS-592
1-645-593-12, 13, 14 (1)
IC406 NJM2234M
Q402 2SC2712G C BUFFER
IC402 NJM2234M
IC404 NJM2233BM
IC407 NJM2234M
Y/C MIX
Q480 2SC2712G
Q481 2SC2712G
Q482 2SC2712G
Q483 2SC2712G
<*> IC491 MC14576CFEL VIDEO OUTPUT AMP
<*> IC492 MC14577CFEL S-Y/S-C OUTPUT AMP
①
②
TP491 (S-C)
TP492 (S-Y)
E401
VIDEO MONITOR (V) OUT 232-7 CP. 505-2
VIDEO MONITOR (G) OUT 232-8 CP. 505-1
LINE V OUT (V) OUT 232-1 CP. 505-8
LINE V OUT (G) OUT 232-2 CP. 505-7
S-C OUT (V) OUT 232-5 CP. 505-4
S-C OUT (G) OUT 232-6 CP. 505-3
S-Y OUT (V) OUT 232-3 CP. 505-6
S-Y OUT (G) OUT 232-4 CP. 505-5
RV401:CNR C LEVEL
RV481:MIX C LEVEL
RV480:MIX Y LEVEL
RV482:S-Y OUT LEVEL
C423A 47μ :MS <*B>
*B: S/N 10281 AND HIGHER
*A: S/N 10001 TO 10280

NOTE: <*>:CHANGED PARTS LIST

ADDRESS	CHANGE INFORMATION	SERIAL No.
	CHANGED	
I-4	IC491 MC14576BF → MC14576CFEL	13851 -
J-4	IC492 MC14576BF → MC14576CFEL	

VO-37A (3/3)

1-641-585-13, 14 (1)
SVO-9500MDP

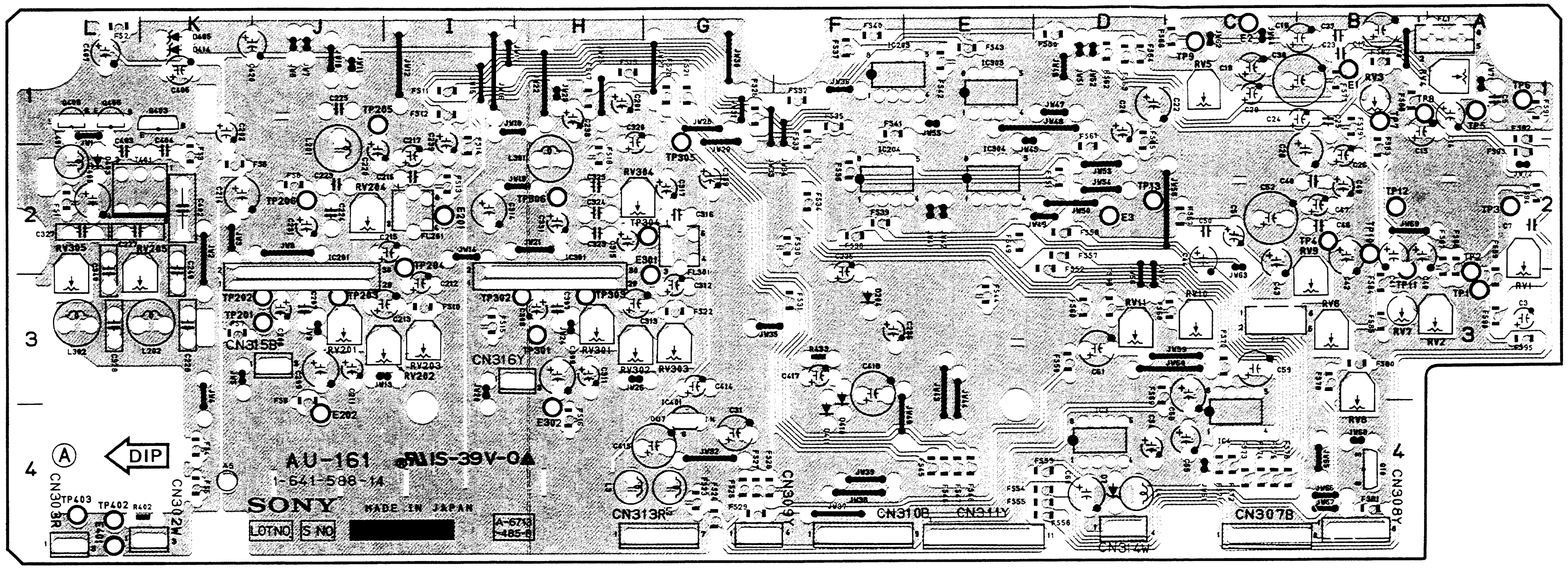
AU-161A : AFM PROCESS, NORMAL AUDIO PROCESS

S/N 20001 and higher (EK)

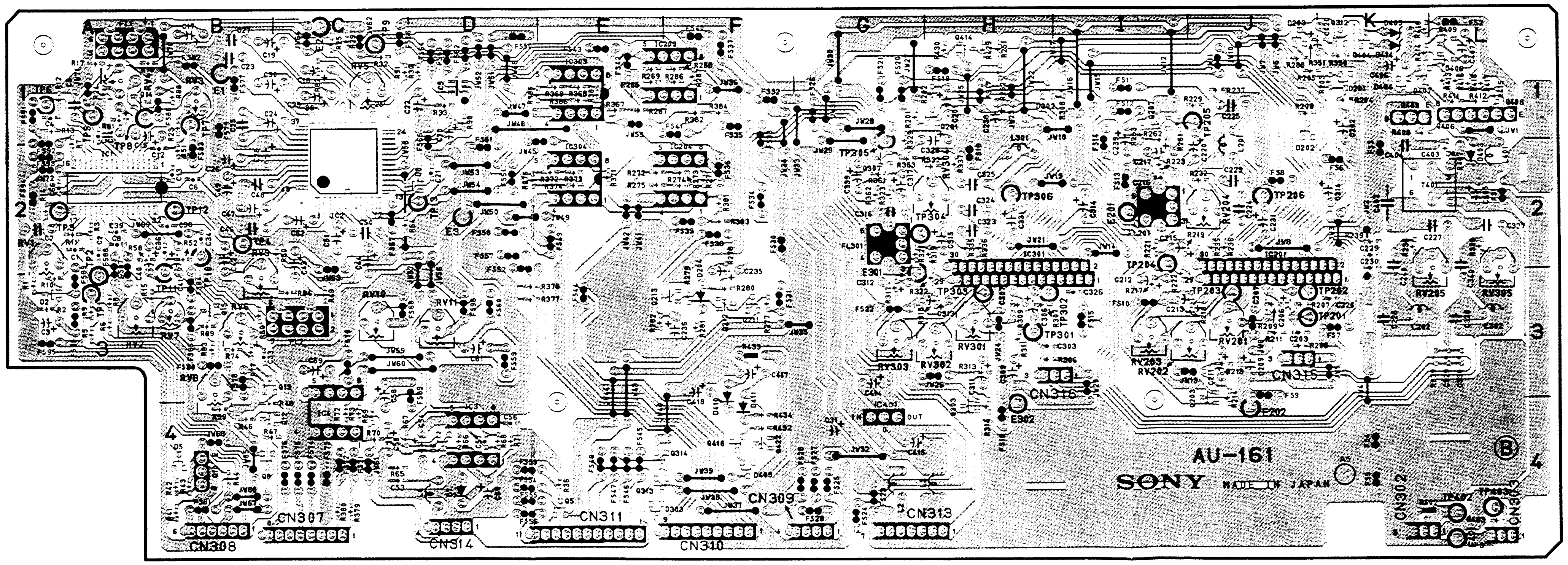
AU-161A (1-641-588-14)

∗ mark ; B SIDE mount

Ref.	Location
CN302	K-4
CN303	L-4
CN307	C-4
CN308	B-4
CN309	F-4
CN310	F-4
CN311	E-4
CN313	H-4
CN314	D-4
CN315	K-3
CN316	I-3
D2	A-3 ∗
D5	B-4 ∗
D6	D-4 ∗
D7	D-4
D8	D-2 ∗
D201	K-1 ∗
D202	I-2 ∗
D203	J-1 ∗
D204	F-3
D302	H-1 ∗
D303	F-4 ∗
D403	L-2
D404	K-1 ∗
D405	K-1
D406	L-1 ∗
D409	F-4 ∗
D410	F-4
D411	F-4
D414	K-1
E1	B-1
E2	C-1
E3	D-2
E201	I-2
E202	J-4
E301	H-2
E302	H-4
E401	L-4
FL1	A-1
FL2	C-3
FL201	I-2
FL301	G-3
IC1	A-2 ∗
IC2	C-2 ∗
IC3	D-4
IC4	C-4
IC5	D-1 ∗
IC201	J-2
IC203	F-1
IC204	F-2
IC301	H-2
IC303	E-1
IC304	E-2
IC401	G-4
Q5	E-4 ∗
Q8	B-4 ∗
Q10	B-4
Q12	C-3 ∗
Q13	C-3 ∗
Q14	A-1 ∗
Q15	B-3 ∗
Q201	H-1 ∗
Q203	J-4 ∗
Q207	I-1 ∗
Q211	F-3 ∗
Q212	F-3 ∗
Q213	E-3 ∗
Q303	H-4 ∗
Q307	G-2 ∗
Q312	K-1 ∗
Q313	E-4 ∗
Q314	F-4 ∗
Q403	K-1
Q404	K-1 ∗
Q406	L-1
Q407	K-1 ∗
Q408	L-1
Q409	L-1 ∗
Q414	H-1 ∗
Q416	F-4 ∗
Q422	F-4 ∗
RV1	A-3
RV2	A-3
RV3	B-1
RV4	B-1
RV5	C-1
RV6	B-3
RV7	B-3
RV8	B-4
RV9	B-2
RV10	C-3
RV11	D-3
RV201	J-3
RV202	I-3
RV203	I-3
RV204	J-2
RV205	L-2
RV301	H-3
RV302	H-3
RV303	G-3
RV304	H-2
RV305	L-2
TP1	A-3
TP2	A-3
TP3	A-2
TP4	B-2
TP5	A-1
TP6	A-1
TP7	B-1
TP8	B-1
TP9	C-1
TP10	B-2
TP11	B-3
TP12	B-2
TP13	D-2
TP201	K-3
TP202	K-3
TP203	J-3
TP204	I-2
TP205	J-1
TP206	J-2
TP301	H-3
TP302	I-3
TP303	H-3
TP304	H-2
TP305	G-2
TP306	H-2
TP402	L-4
TP403	L-4
T401	L-2


AU-161
1-641-588-14
SONY
MADE IN JAPAN
DIP
LOT NO
S NO
CN313R
CN310B
CN311Y
CN314W
CN307B
CN308Y
CN315B
CN316Y
CN309
CN302W
CN303R

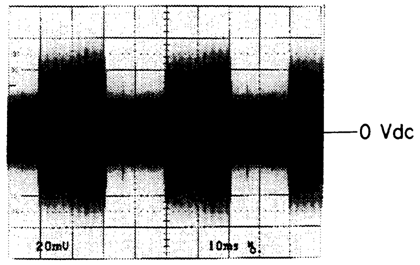
AU-161/A — A SIDE —
1-641-588-14 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


AU-161
SONY
MADE IN JAPAN
CN307
CN308
CN311
CN314
CN310
CN309
CN313
CN316
CN315
CN302

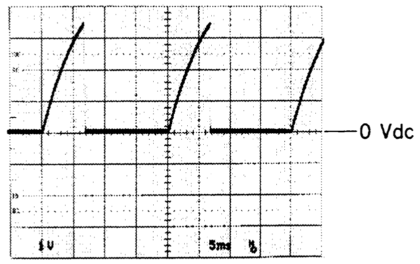
AU-161/A — B SIDE —
1-641-588-14 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

AU-161A (1/2); AFM PROCESS

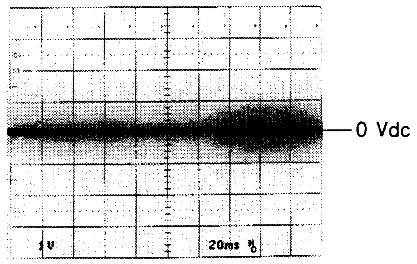
① TP1 (A-3) PB mode



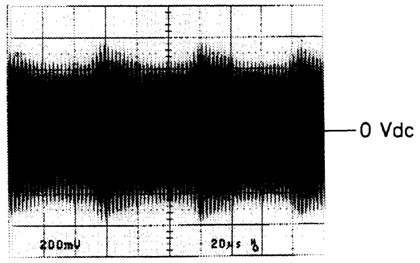
② TP3 (A-2) PB mode



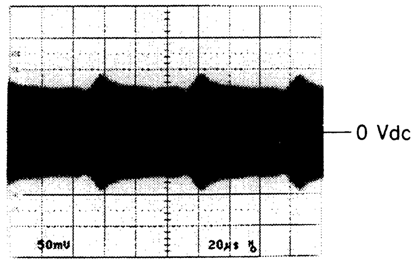
③ TP6 (A-1) PB mode



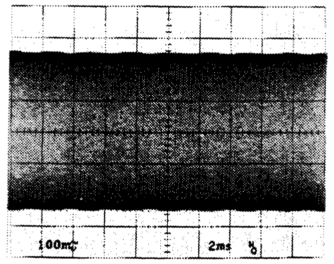
④ TP4 (B-2) PB mode



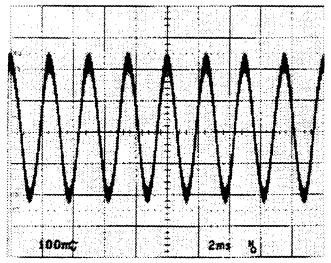
⑤ TP5 (A-1) PB mode



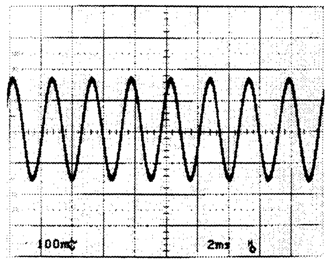
⑥ TP7 (B-1) STOP (E-E) mode



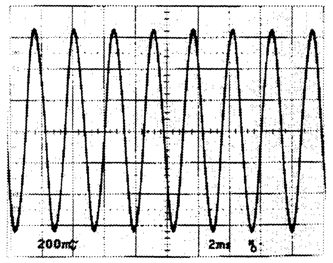
⑦ TP8 (B-1) PB mode



TP8 (B-1) REC mode



⑧ TP9 (C-1) STOP (E-E) mode

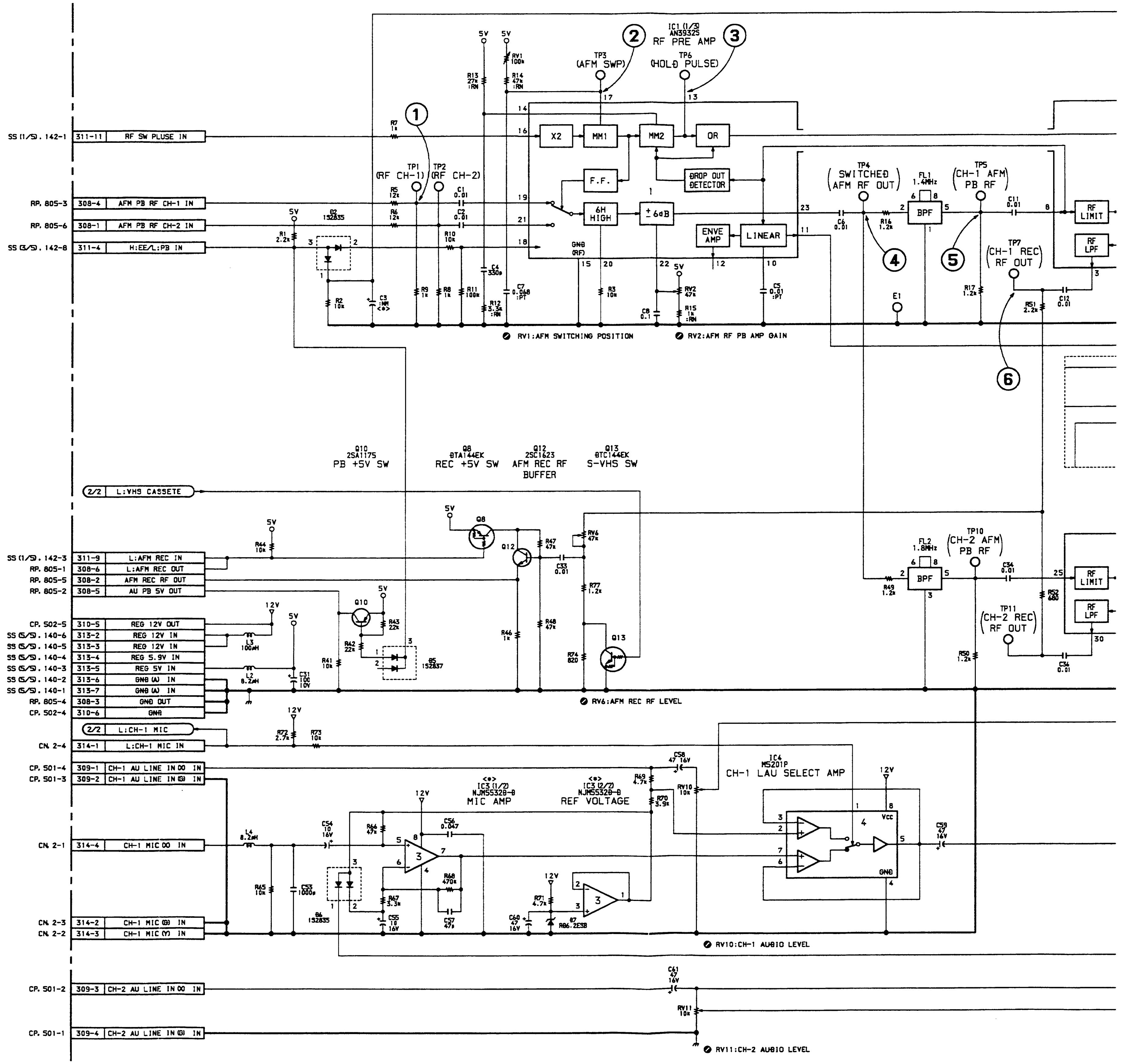


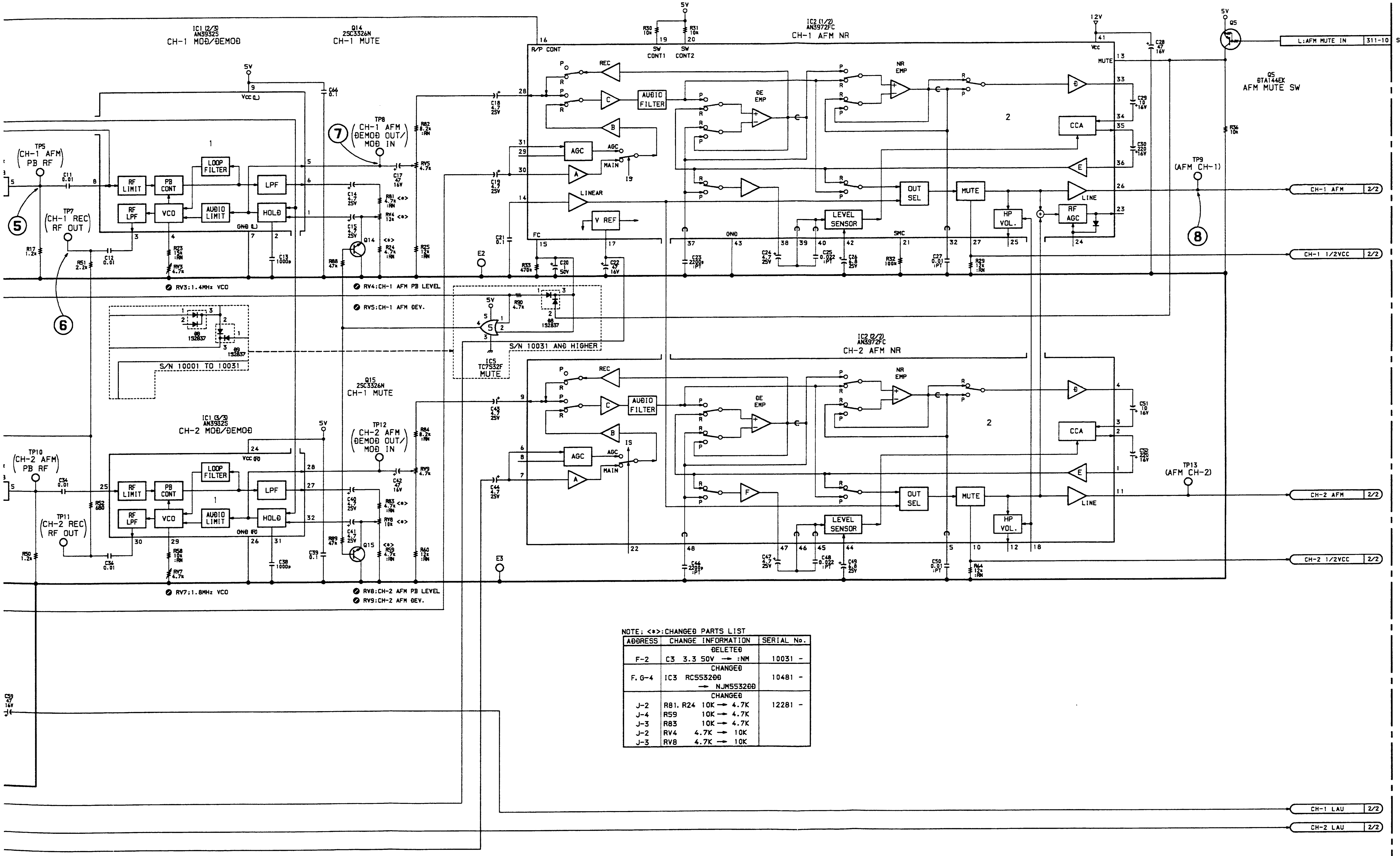
Measurement Condition

CH-1, AUDIO IN: 400 Hz, −10 dBu

STOP (E-E) mode: N-VHS

PB mode: KRV-44PS


IC1 (1/2) AN3932S RF PRE AMP
②
③
TP3 (AFM SWP)
TP6 (HOLD PULSE)
①
TP1 (RF CH-1)
TP2 (RF CH-2)
X2
MM1
MM2
OR
F.F.
DROP OUT DETECTOR
6H HIGH
±6dB
ENVE AMP
LINEAR
TP4 (SWITCHED AFM RF OUT)
FL1 1.4MHz
BPF
TP5 (CH-1 AFM PB RF)
RF LIMIT
RF LPF
TP7 (CH-1 REC RF OUT)
④
⑤
⑥
E1
RV1:AFM SWITCHING POSITION
RV2:AFM RF PB AMP GAIN
SS (1/5). 142-1
311-11 RF SW PLUSE IN
RP. 805-3
308-4 AFM PB RF CH-1 IN
RP. 805-6
308-1 AFM PB RF CH-2 IN
SS (5/5). 142-8
311-4 H:EE/L:PB IN
Q10 2SA1175 PB +5V SW
Q8 DTA144EK REC +5V SW
Q12 2SC1623 AFM REC RF BUFFER
Q13 DTC144EK S-VHS SW
(2/2) L:VHS CASSETE
SS (1/5). 142-3
311-9 L:AFM REC IN
RP. 805-1
308-6 L:AFM REC OUT
RP. 805-5
308-2 AFM REC RF OUT
RP. 805-2
308-5 AU PB 5V OUT
CP. 502-5
310-5 REG 12V OUT
313-2 REG 12V IN
313-3 REG 12V IN
313-4 REG 5.9V IN
313-5 REG 5V IN
313-6 GND (A) IN
313-7 GND (A) IN
308-3 GND OUT
310-6 GND
RV6:AFM REC RF LEVEL
FL2 1.8MHz
BPF
TP10 (CH-2 AFM PB RF)
TP11 (CH-2 REC RF OUT)
(2/2) L:CH-1 MIC
CN. 2-4
314-1 L:CH-1 MIC IN
CP. 501-4
309-1 CH-1 AU LINE IN (H) IN
CP. 501-3
309-2 CH-1 AU LINE IN (G) IN
CN. 2-1
314-4 CH-1 MIC (H) IN
CN. 2-3
314-2 CH-1 MIC (G) IN
CN. 2-2
314-3 CH-1 MIC (C) IN
IC3 (1/2) NJM5532D-D MIC AMP
IC3 (2/2) NJM5532D-D REF VOLTAGE
IC4 M5201P CH-1 LAU SELECT AMP
RV10:CH-1 AUDIO LEVEL
CP. 501-2
309-3 CH-2 AU LINE IN (H) IN
CP. 501-1
309-4 CH-2 AU LINE IN (G) IN
RV11:CH-2 AUDIO LEVEL


IC1 (2/3) AN3932S
CH-1 MOD/DEMOD
Q14 2SC3326N
CH-1 MUTE
IC2 (1/2) AN3972FC
CH-1 AFM NR
IC1 (3/3) AN3932S
CH-2 MOD/DEMOD
Q15 2SC3326N
CH-1 MUTE
IC2 (2/2) AN3972FC
CH-2 AFM NR
IC5 TC7S32F MUTE
Q5 BTA144EK
AFM MUTE SW
TP5 (CH-1 AFM PB RF)
TP7 (CH-1 REC RF OUT)
TP8 (CH-1 AFM DEMOD OUT/MOD IN)
TP9 (AFM CH-1)
TP10 (CH-2 AFM PB RF)
TP11 (CH-2 REC RF OUT)
TP12 (CH-2 AFM DEMOD OUT/MOD IN)
TP13 (AFM CH-2)
RF LIMIT
PB CONT
LOOP FILTER
LPF
RF LPF
VCO
AUDIO LIMIT
HOLD
AGC
MAIN
LINEAR
V REF
AUDIO FILTER
DE EMP
NR EMP
OUT SEL
MUTE
LEVEL SENSOR
HP VOL.
RF AGC
CCA
LINE
REC
SW CONT1
SW CONT2
R/P CONT
L:AFM MUTE IN
311-10
SS (1/5). 142-2
CH-1 AFM 2/2
CH-1 1/2VCC 2/2
CH-2 AFM 2/2
CH-2 1/2VCC 2/2
CH-1 LAU 2/2
CH-2 LAU 2/2
S/N 10001 TO 10031
S/N 10031 AND HIGHER
RV3:1.4MHz VCO
RV4:CH-1 AFM PB LEVEL
RV5:CH-1 AFM DEV.
RV7:1.8MHz VCO
RV8:CH-2 AFM PB LEVEL
RV9:CH-2 AFM DEV.
5V
12V
E2
E3
5
6
7
8
1
2
3
4
5
H
I
J
K
L
M
N
O
P

NOTE; <*>:CHANGED PARTS LIST

ADDRESS	CHANGE INFORMATION	SERIAL No.
F-2	DELETED C3 3.3 50V → :NM	10031 -
F, G-4	CHANGED IC3 RC5532DD → NJM5532DD	10481 -
J-2 J-4 J-3 J-2 J-3	CHANGED R81, R24 10K → 4.7K R59 10K → 4.7K R83 10K → 4.7K RV4 4.7K → 10K RV8 4.7K → 10K	12281 -

AU-161A (1/2)

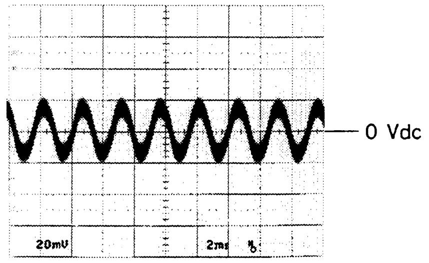
1-641-588-12, 13, 14 (2)
SVO-9500MDP

AU-161A (2/2)

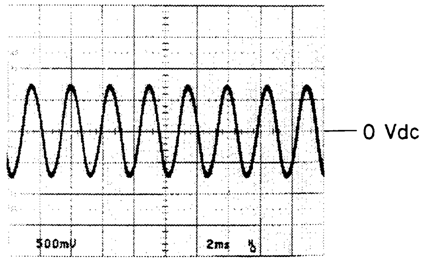
13-36

AU-161A (2/2)

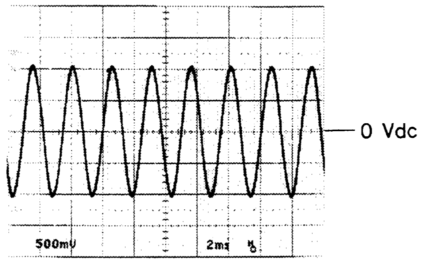
① TP203 (J-3) PB mode



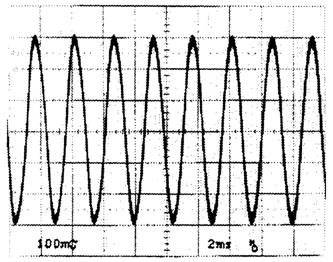
② TP204 (I-2) PB mode



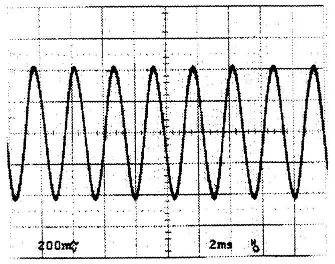
TP204 (I-2) STOP (E-E) mode



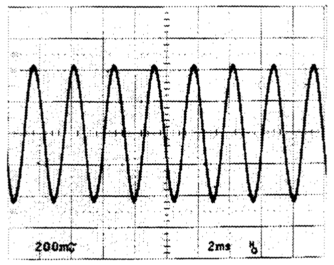
③ TP205 (J-1) PB mode



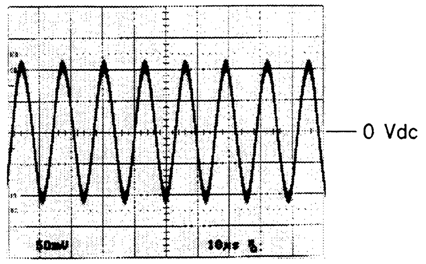
TP205 (J-1) STOP (E-E) mode



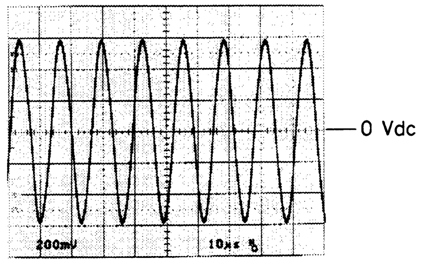
④ TP206 (J-2) STOP (E-E) mode



⑤ TP402 (L-4) REC mode



⑥ TP403 (L-4) REC mode



Measurement Condition

CH-1, AUDIO IN: 400 Hz, −10 dBu
STOP (E-E) mode: N-VHS
REC mode: N-VHS
PB mode: KRV-44PS

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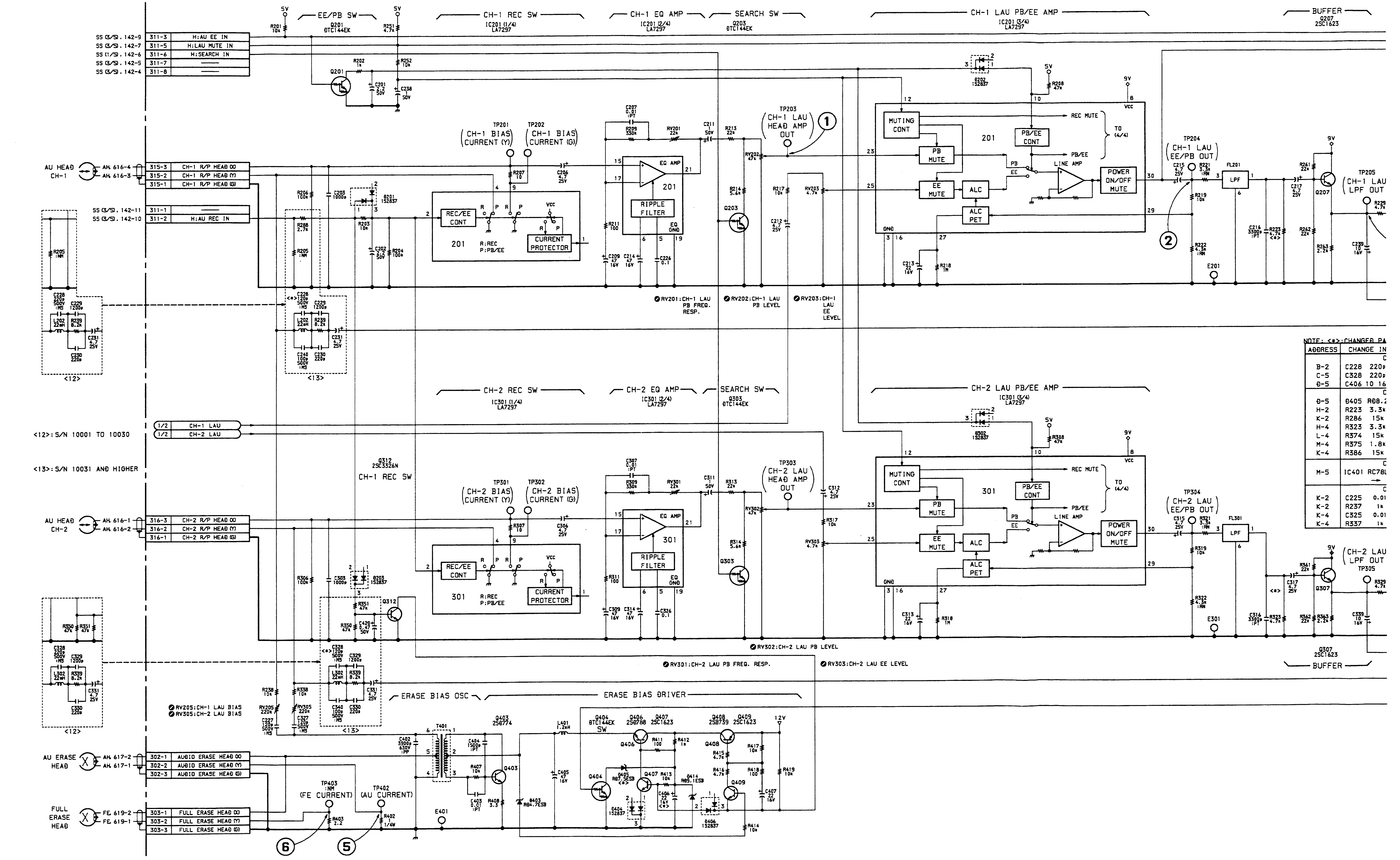
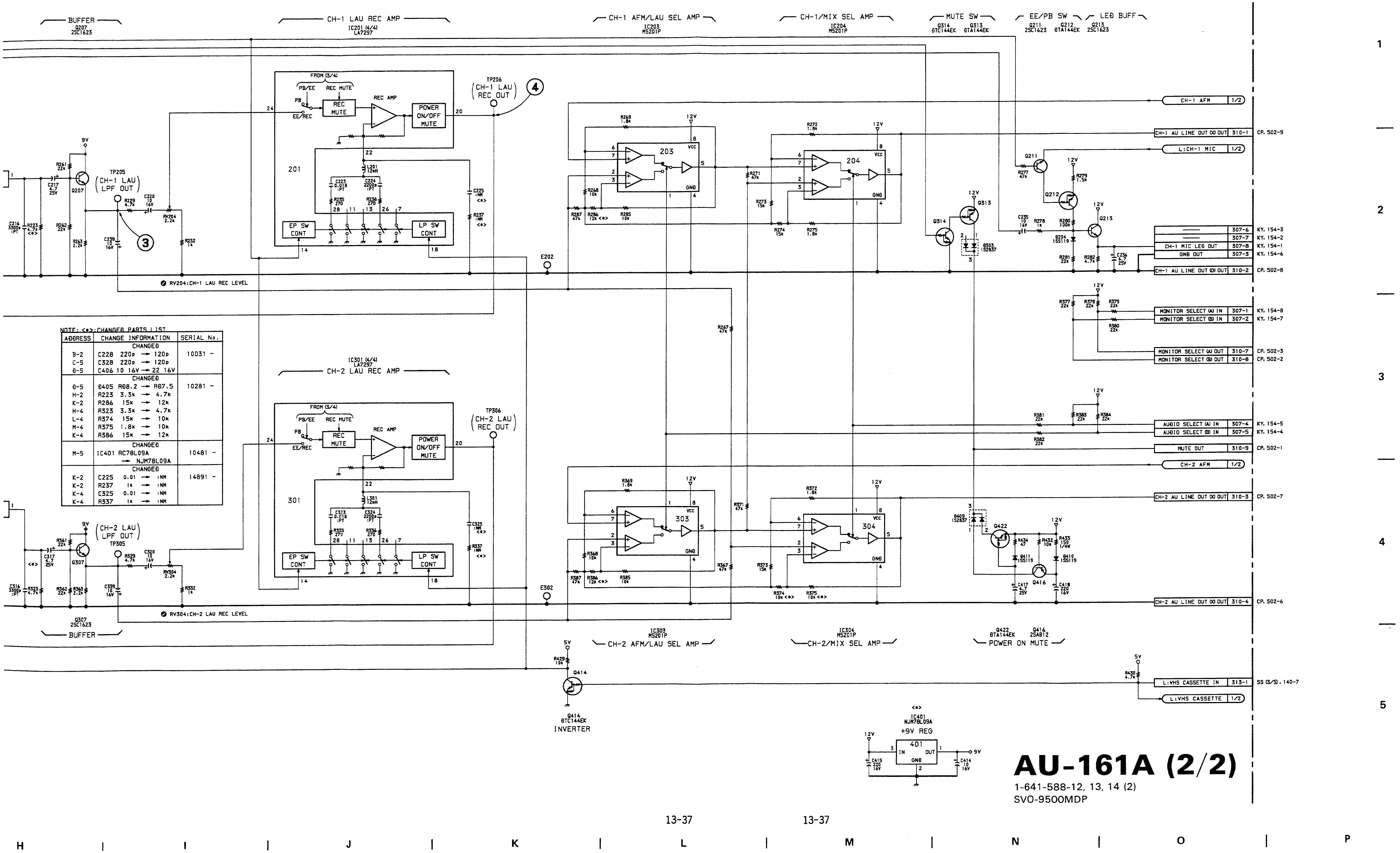
AU-161A (2/2) ; NORMAL AUDIO PROCESS


EE/PB SW
Q201 DTC144EK
CH-1 REC SW
IC201 (1/4) LA7297
CH-1 EQ AMP
IC201 (2/4) LA7297
SEARCH SW
Q203 DTC144EK
CH-1 LAU PB/EE AMP
IC201 (3/4) LA7297
BUFFER
Q207 2SC1623
SS (3/5). 142-9 311-3 H:AU EE IN
SS (3/5). 142-7 311-5 H:LAU MUTE IN
SS (1/5). 142-6 311-6 H:SEARCH IN
SS (3/5). 142-5 311-7
SS (3/5). 142-4 311-8
AU HEAD CH-1
AH 616-4
AH 616-3
315-3 CH-1 R/P HEAD (X)
315-2 CH-1 R/P HEAD (Y)
315-1 CH-1 R/P HEAD (G)
SS (3/5). 142-11 311-1
SS (3/5). 142-10 311-2 H:AU REC IN
TP201 (CH-1 BIAS CURRENT (Y))
TP202 (CH-1 BIAS CURRENT (G))
REC/EE CONT
201
R:REC P:PB/EE
CURRENT PROTECTOR
VCC
EQ AMP
RIPPLE FILTER
EQ GND
TP203 (CH-1 LAU HEAD AMP OUT)
①
MUTING CONT
PB MUTE
EE MUTE
ALC
ALC DET
PB/EE CONT
REC MUTE
PB/EE
TO (4/4)
LINE AMP
POWER ON/OFF MUTE
GND
TP204 (CH-1 LAU EE/PB OUT)
②
E201
FL201
LPF
TP205 (CH-1 LAU LPF OUT
RV201:CH-1 LAU PB FREQ. RESP.
RV202:CH-1 LAU PB LEVEL
RV203:CH-1 LAU EE LEVEL
<12>
<13>
<12>:S/N 10001 TO 10030
<13>:S/N 10031 AND HIGHER
1/2 CH-1 LAU
1/2 CH-2 LAU
CH-2 REC SW
IC301 (1/4) LA7297
CH-2 EQ AMP
IC301 (2/4) LA7297
SEARCH SW
Q303 DTC144EK
CH-2 LAU PB/EE AMP
IC301 (3/4) LA7297
Q312 2SC3326N
CH-1 REC SW
AU HEAD CH-2
AH 616-1
AH 616-2
316-3 CH-2 R/P HEAD (X)
316-2 CH-2 R/P HEAD (Y)
316-1 CH-2 R/P HEAD (G)
TP301 (CH-2 BIAS CURRENT (Y))
TP302 (CH-2 BIAS CURRENT (G))
301
TP303 (CH-2 LAU HEAD AMP OUT)
TP304 (CH-2 LAU EE/PB OUT)
E301
FL301
(CH-2 LAU LPF OUT
TP305
Q307 2SC1623
BUFFER
RV302:CH-2 LAU PB LEVEL
RV301:CH-2 LAU PB FREQ. RESP.
RV303:CH-2 LAU EE LEVEL
RV205:CH-1 LAU BIAS
RV305:CH-2 LAU BIAS
ERASE BIAS OSC
ERASE BIAS DRIVER
Q403 2SD774
T401
Q404 DTC144EK SW
Q406 2SD788
Q407 2SC1623
Q408 2SB739
Q409 2SC1623
12V
AU ERASE HEAD
AH 617-2
AH 617-1
302-1 AUDIO ERASE HEAD (X)
302-2 AUDIO ERASE HEAD (Y)
302-3 AUDIO ERASE HEAD (G)
FULL ERASE HEAD
FE 619-2
FE 619-1
303-1 FULL ERASE HEAD (X)
303-2 FULL ERASE HEAD (Y)
303-3 FULL ERASE HEAD (G)
TP403 :NM (FE CURRENT)
TP402 (AU CURRENT)
E401
⑥
⑤

NOTE: <*>:CHANGED PA

ADDRESS	CHANGE IN
	C
B-2	C228 220p
C-5	C328 220p
D-5	C406 10 16
	C
D-5	D405 RD8.2
H-2	R223 3.3k
K-2	R286 15k
H-4	R323 3.3k
L-4	R374 15k
M-4	R375 1.8k
K-4	R386 15k
	C
M-5	IC401 RC78L →
	C
K-2	C225 0.01
K-2	R237 1k
K-4	C325 0.01
K-4	R337 1k

A | B | C | D | E | F | G | H |


BUFFER
Q207 2SC1623
CH-1 LAU REC AMP
IC201 (4/4) LA7297
CH-1 AFM/LAU SEL AMP
IC203 M5201P
CH-1/MIX SEL AMP
IC204 M5201P
MUTE SW
Q314 DTC144EK
Q313 DTA144EK
EE/PB SW
Q211 2SC1623
Q212 DTA144EK
LED BUFF
Q213 2SC1623
FROM (3/4)
PB/EE
REC MUTE
REC AMP
POWER ON/OFF MUTE
TP206
CH-1 LAU REC OUT
4
TP205
CH-1 LAU LPF OUT
3
EP SW CONT
LP SW CONT
201
203
204
E202
RV204:CH-1 LAU REC LEVEL
CH-1 AFM 1/2
CH-1 AU LINE OUT (+) OUT 310-1 CP. S02-9
L:CH-1 MIC 1/2
307-6 KY. 154-3
307-7 KY. 154-2
CH-1 MIC LED OUT 307-8 KY. 154-1
GND OUT 307-3 KY. 154-6
CH-1 AU LINE OUT (-) OUT 310-2 CP. S02-8
MONITOR SELECT (A) IN 307-1 KY. 154-8
MONITOR SELECT (B) IN 307-2 KY. 154-7
MONITOR SELECT (A) OUT 310-7 CP. S02-3
MONITOR SELECT (B) OUT 310-8 CP. S02-2
IC301 (4/4) LA7297
CH-2 LAU REC AMP
TP306
CH-2 LAU REC OUT
CH-2 LAU LPF OUT
TP305
301
303
304
E302
RV304:CH-2 LAU REC LEVEL
AUDIO SELECT (A) IN 307-4 KY. 154-5
AUDIO SELECT (B) IN 307-5 KY. 154-4
MUTE OUT 310-9 CP. S02-1
CH-2 AFM 1/2
CH-2 AU LINE OUT (+) OUT 310-3 CP. S02-7
CH-2 AU LINE OUT (-) OUT 310-4 CP. S02-6
Q307 2SC1623
BUFFER
IC303 M5201P
CH-2 AFM/LAU SEL AMP
IC304 M5201P
CH-2/MIX SEL AMP
Q422 DTA144EK
Q416 2SA812
POWER ON MUTE
L:VHS CASSETTE IN 313-1 SS (3/5). 140-7
L:VHS CASSETTE 1/2
Q414 DTC144EK
INVERTER
<*>
IC401 NJM78L09A
+9V REG
401
IN OUT GND
12V
9V
5V
1
2
3
4
5
H
I
J
K
L
M
N
O
P

NOTE: <*>:CHANGED PARTS LIST

ADDRESS	CHANGE INFORMATION	SERIAL No.
	CHANGED	
B-2	C228 220p → 120p	10031 -
C-5	C328 220p → 120p	
D-5	C406 10 16V → 22 16V	
	CHANGED	
D-5	D405 RD8.2 → RD7.5	10281 -
H-2	R223 3.3k → 4.7k	
K-2	R286 15k → 12k	
H-4	R323 3.3k → 4.7k	
L-4	R374 15k → 10k	
M-4	R375 1.8k → 10k	
K-4	R386 15k → 12k	
	CHANGED	
M-5	IC401 RC78L09A → NJM78L09A	10481 -
	CHANGED	
K-2	C225 0.01 → :NM	14891 -
K-2	R237 1k → :NM	
K-4	C325 0.01 → :NM	
K-4	R337 1k → :NM	

AU-161A (2/2)

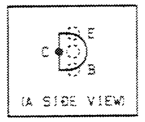
1-641-588-12, 13, 14 (2)
SVO-9500MDP

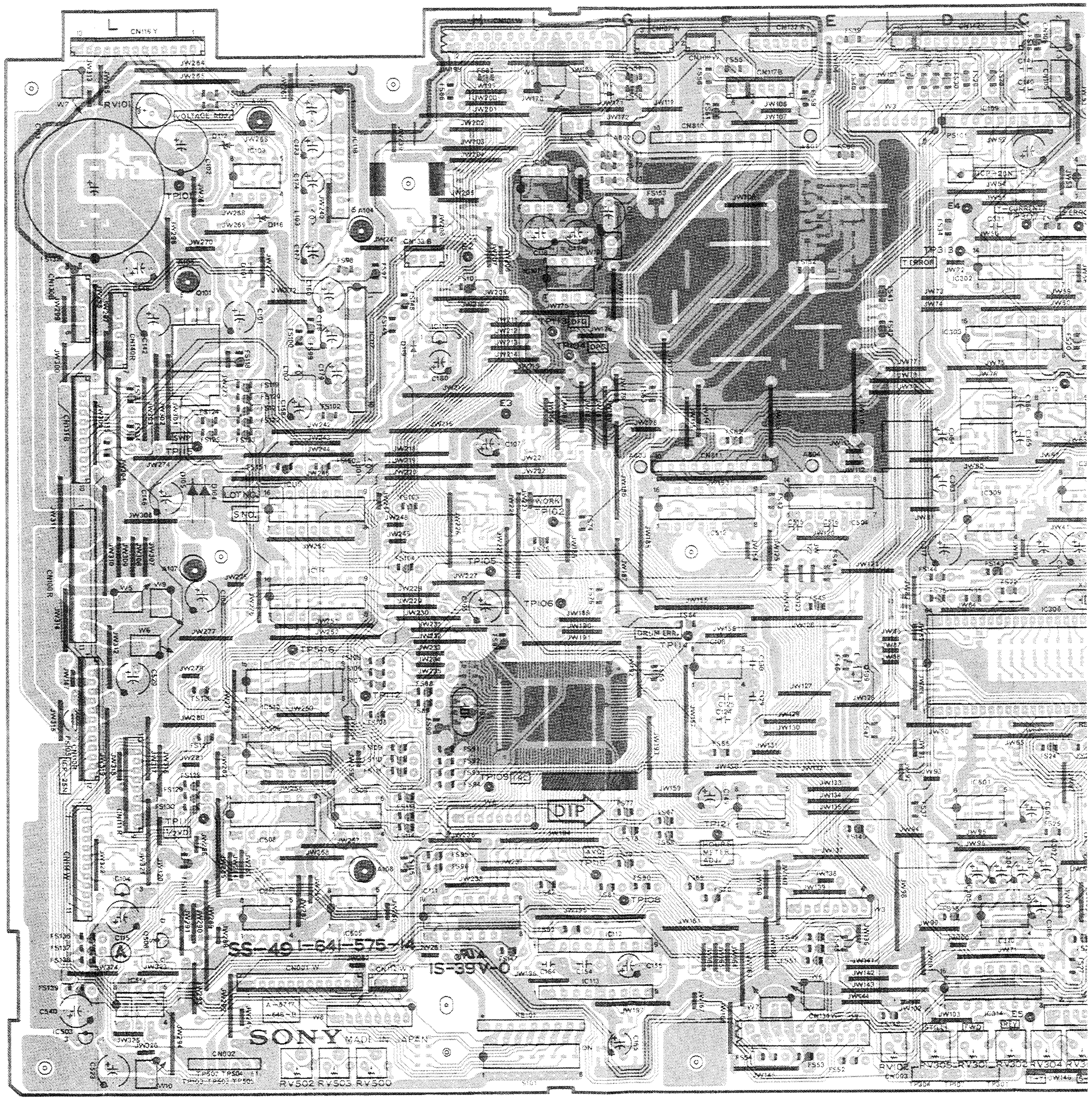
SS-49A ; SERVO & SYSTEM CONTROL S/N 10001 to 11080 (EK)

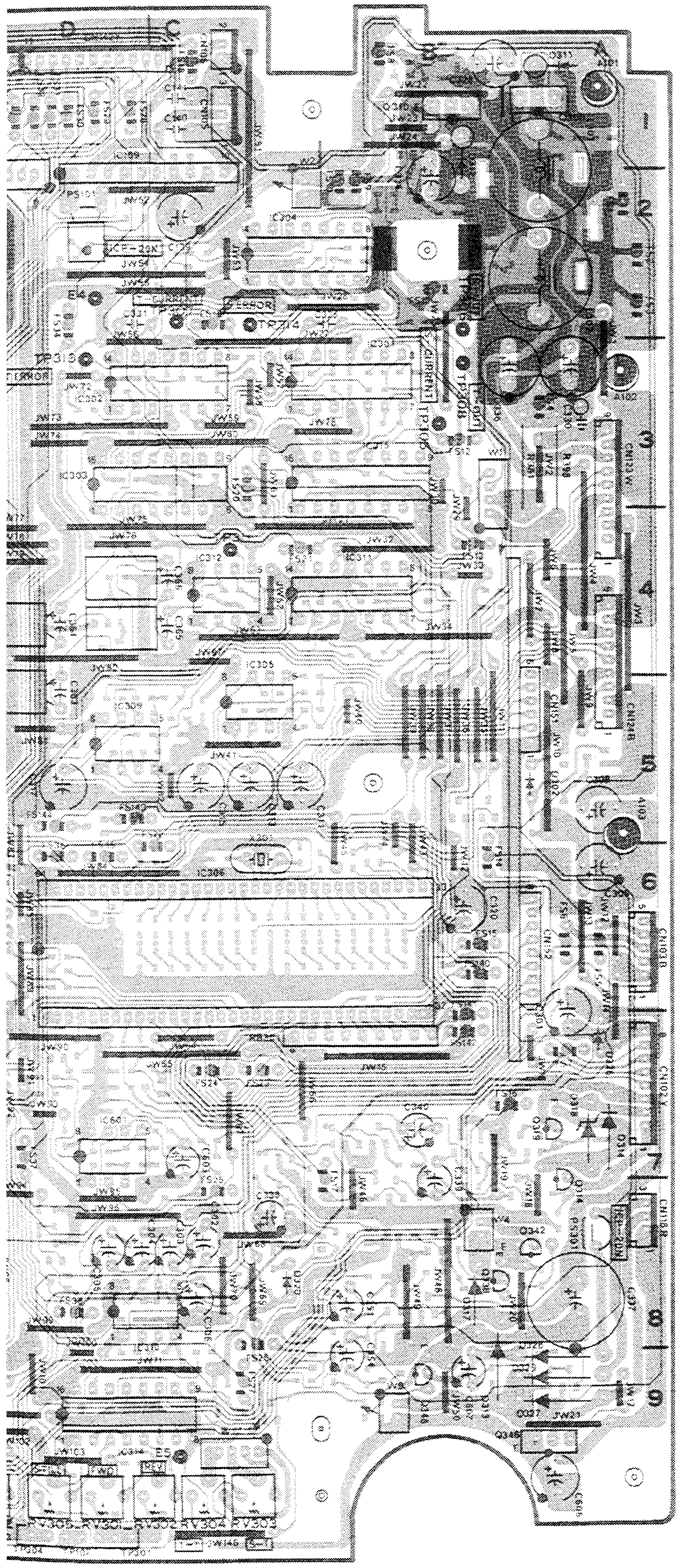
SS-49A (1-641-575-14)

CN100	L-5	IC101	G-7 *	Q307	B-1 *	TP113	G-3
CN101	H-1	IC102	F-8	Q308	A-1	TP114	F-6
CN102	A-7	IC103	K-2	Q309	B-1 *	TP115	K-4
CN103	A-6	IC104	L-8	Q310	B-1	TP121	F-8
CN105	C-1	IC106	G-2	Q311	C-8 *	TP301	D-9
CN106	C-1	IC107	G-3	Q312	B-8 *	TP304	D-9
CN107	F-1	IC108	F-6	Q313	A-8 *	TP305	B-3
CN108	F-1	IC109	D-1	Q314	A-8	TP306	B-2
CN110	L-7	IC111	H-8	Q315	B-7 *	TP307	C-2
CN111	L-7	IC112	G-8	Q316	B-7 *	TP308	B-3
CN114	L-8	IC114	J-5	Q317	C-7 *	TP311	C-4
CN116	L-1	IC115	K-5	Q318	A-7 *	TP313	D-3
CN117	F-1	IC116	H-3	Q319	A-7	TP314	C-2
CN118	A-8	IC301	B-3	Q320	B-5 *	TP502	K-9
CN123	A-3	IC302	D-3	Q321	B-5 *	TP503	K-9
CN124	A-5	IC303	D-3	Q322	D-4 *	TP504	K-9
CN130	L-3	IC304	C-2	Q323	D-4 *	TP505	K-9
CN131	L-4	IC305	C-4	Q331	C-7 *	TP506	J-6
CN132	E-1	IC306	C-6	Q332	B-8 *		
CN133	J-3	IC309	D-5	Q333	C-9 *	X101	H-6
CN134	E-9	IC310	D-8	Q334	C-8 *	X301	C-5
CN140	L-3	IC311	B-4	Q335	C-8 *		
CN142	D-1	IC312	C-4	Q336	D-6 *		
CN151	A-5	IC314	D-9	Q337	B-8 *	* mark ; B SIDE mount	
CN152	A-6	IC315	B-3	Q338	B-8		
CN810	F-2	IC503	L-9	Q340	B-9 *		
CN811	F-4	IC504	E-5	Q341	B-8 *		
		IC505	J-8	Q342	A-8		
D101	K-3	IC506	K-7	Q346	A-9		
D102	K-2 *	IC508	K-8	Q347	A-9 *		
D104	K-5	IC509	J-7	Q348	B-9		
D105	K-5	IC510	K-6	Q349	C-9 *		
D108	L-8 *	IC512	F-5	Q350	D-6 *		
D112	K-2	IC513	K-8	Q351	D-5 *		
D113	K-2 *	IC514	L-9	Q352	B-8 *		
D116	K-2	IC601	D-7	Q506	L-8		
D119	J-3			Q507	K-6 *		
D301	D-8 *	PS101	D-2	Q510	K-7 *		
D302	A-5	PS105	L-7 *	Q516	H-7 *		
D303	A-5 *	PS301	A-8				
D308	D-7 *			RB101	H-9		
D310	D-2 *	Q101	K-3	RB301	C-7		
D311	A-1	Q102	K-3 *				
D312	B-1	Q103	K-3 *	RV101	L-1		
D313	B-9	Q104	L-2 *	RV102	E-9		
D314	A-7	Q107	H-2 *	RV301	D-9		
D315	B-8 *	Q108	E-6 *	RV302	C-9		
D316	B-8 *	Q109	E-6	RV303	C-9		
D317	B-8	Q110	J-2 *	RV304	C-9		
D318	A-7	Q114	H-2 *	RV305	D-9		
D319	B-7 *	Q115	F-8 *	RV500	J-9		
D320	C-8	Q116	H-2 *	RV502	K-9		
D321	B-4 *	Q117	F-8 *	RV503	J-9		
D326	A-7	Q118	E-8 *				
D327	A-9	Q119	H-2 *	S101	H-9		
D328	A-9	Q120	E-2 *				
D329	A-9	Q121	G-8 *	TP101	L-2		
D505	F-5 *	Q128	E-2 *	TP102	G-5		
D506	F-5 *	Q129	E-2 *	TP103	K-9		
D508	K-8 *	Q130	E-2 *	TP104	G-3		
D509	K-8 *	Q131	E-2 *	TP105	H-5		
		Q134	K-5 *	TP106	G-6		
E1	K-9	Q301	C-9 *	TP107	D-9		
E2	H-3	Q302	C-9 *	TP108	G-8		
E3	H-4	Q303	C-8 *	TP109	H-7		
E5	C-9	Q304	D-8 *	TP110	G-8		
		Q305	A-5 *	TP111	L-7		
		Q306	C-2 *	TP112	J-6		

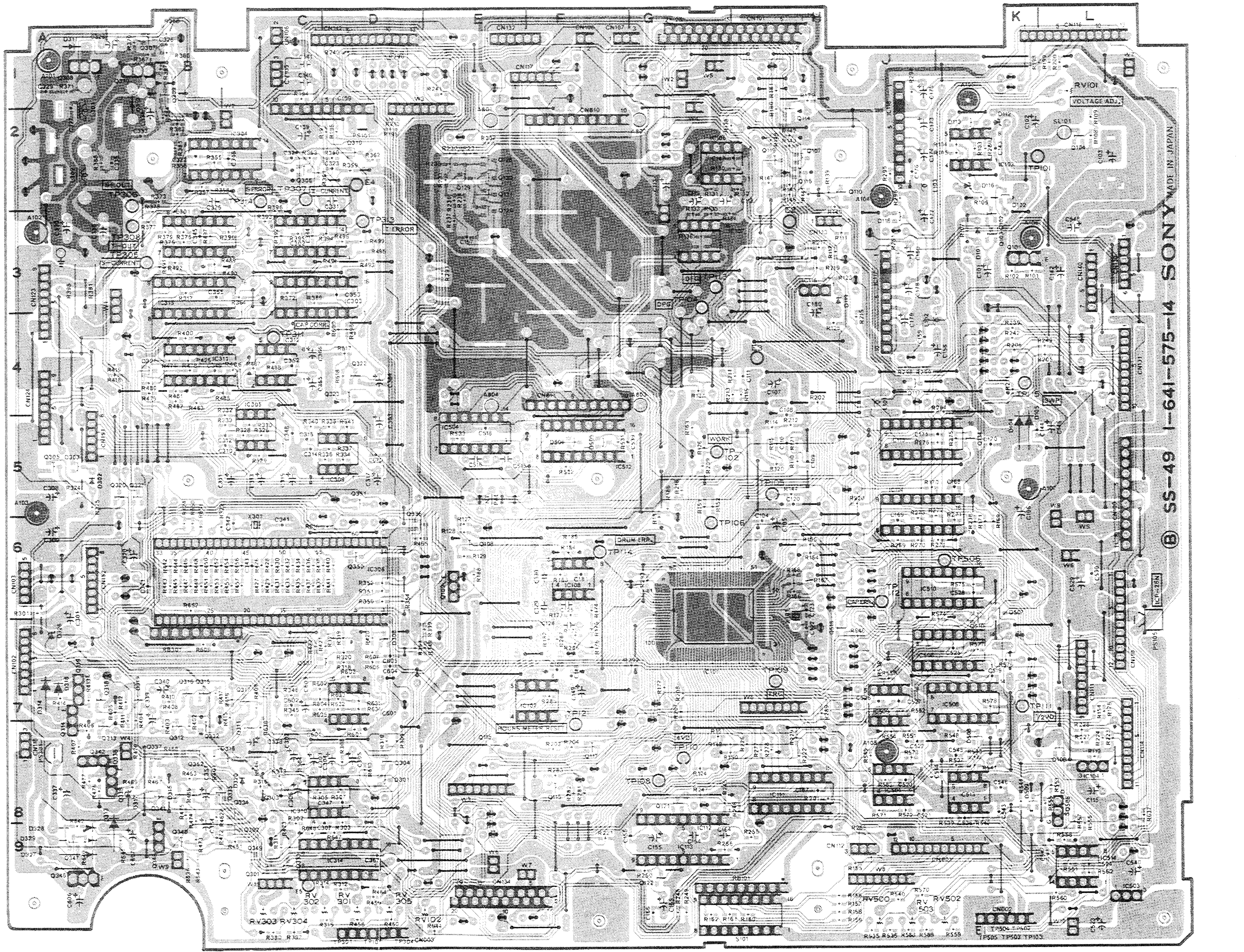
RADEAL MOUNT TYPE TRANSISTOR PIN LAYOUT





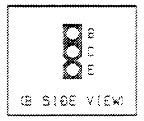

A
B
C
D
1
2
3
4
5
6
7
8
9
IC306
RV305
RV301
RV302
RV304
RV303

SS-49/A — A SIDE —
1-641-575-14 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

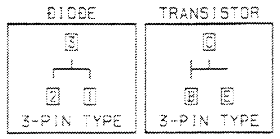

A
B
C
D
E
F
G
H
I
J
K
L
1
2
3
4
5
6
7
8
9
SONY
SS-49 1-641-575-14
MADE IN JAPAN
VOLTAGE ADJ.
RV101
RV303 RV304
RV500
RV502

SS-49/A — B SIDE —
1-641-575-14 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

RADIAL MOUNT TYPE
TRANSISTOR
PIN LAYOUT


B
C
E
(B SIDE VIEW)

SURFACE MOUNT TYPE
DIODE/TRANSISTOR PIN LAYOUTS


DIODE
3
2
1
3-PIN TYPE
TRANSISTOR
C
B
E
3-PIN TYPE

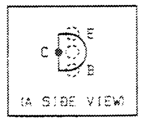
SS-49A ; SERVO & SYSTEM CONTROL S/N 11081 and higher (EK)

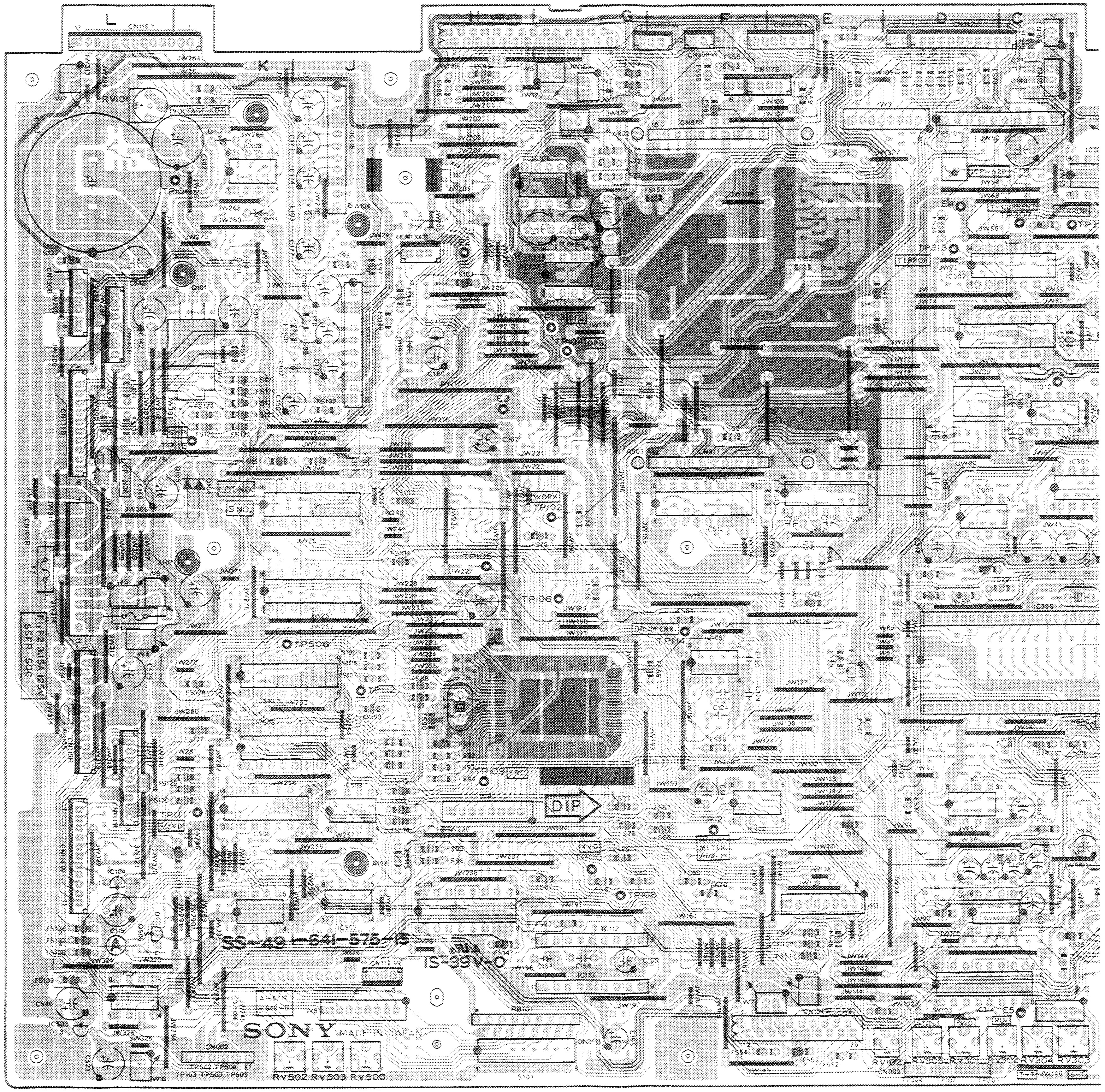
SS-49A (1-641-575-15)

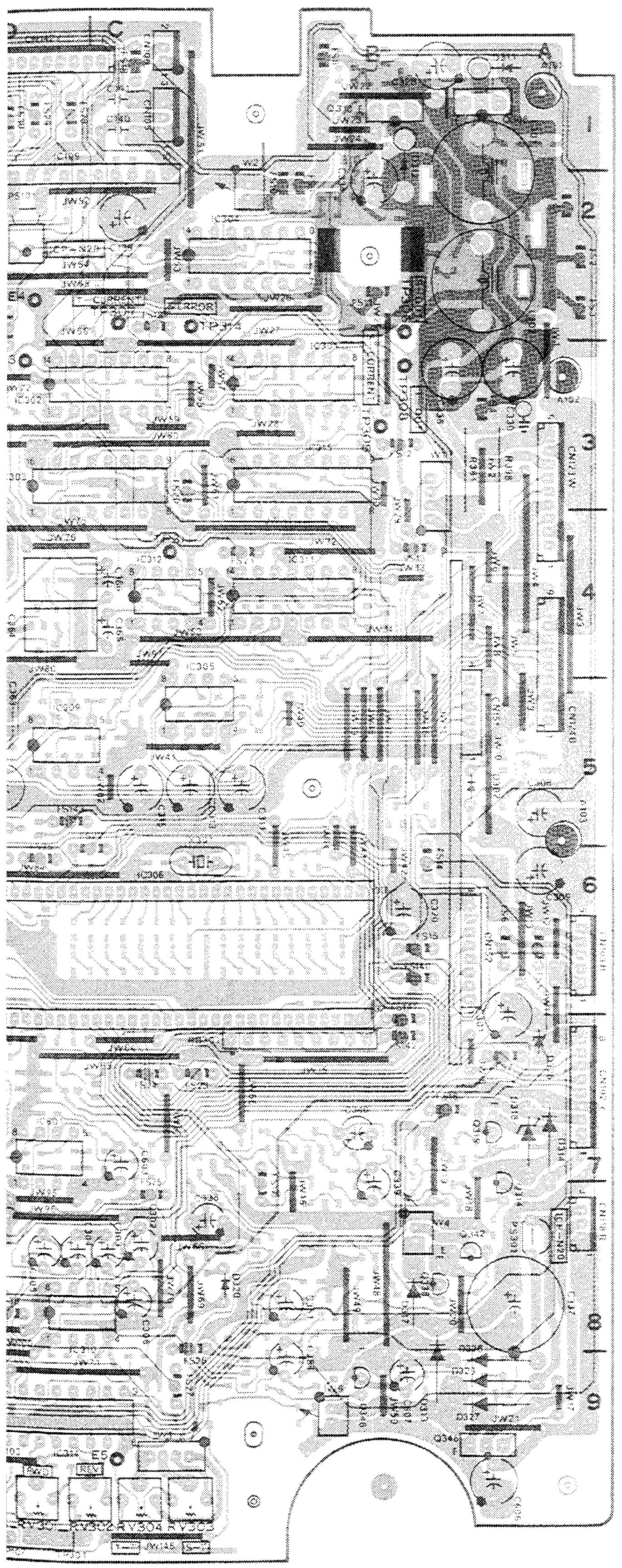
CN100	L-5	IC101	G-7 *	Q307	B-1 *	TP113	G-3
CN101	H-1	IC102	F-8	Q308	A-1	TP114	F-6
CN102	A-7	IC103	K-2	Q309	B-1 *	TP115	K-4
CN103	A-6	IC104	L-8	Q310	B-1	TP121	F-8
CN105	C-1	IC106	G-2	Q311	C-8 *	TP301	D-9
CN106	C-1	IC107	G-3	Q312	B-8 *	TP304	D-9
CN107	F-1	IC108	F-6	Q313	A-8 *	TP305	B-3
CN108	F-1	IC109	D-1	Q314	A-8	TP306	B-2
CN110	L-7	IC111	H-8	Q315	B-7 *	TP307	C-2
CN111	L-7	IC112	G-8	Q316	B-7 *	TP308	B-3
CN114	L-8	IC114	J-5	Q317	C-7 *	TP311	C-4
CN116	L-1	IC115	K-5	Q318	A-7 *	TP313	D-3
CN117	F-1	IC116	H-3	Q319	A-7	TP314	C-2
CN118	A-8	IC301	B-3	Q320	B-5 *	TP502	K-9
CN123	A-3	IC302	D-3	Q321	B-5 *	TP503	K-9
CN124	A-5	IC303	D-3	Q322	D-4 *	TP504	K-9
CN130	L-3	IC304	C-2	Q323	D-4 *	TP505	K-9
CN131	L-4	IC305	C-4	Q331	C-7 *	TP506	J-6
CN132	E-1	IC306	C-6	Q332	B-8 *		
CN133	J-3	IC309	D-5	Q333	C-9 *	X101	H-6
CN134	E-9	IC310	D-8	Q334	C-8 *	X301	C-5
CN140	L-3	IC311	B-4	Q335	C-8 *		
CN142	D-1	IC312	C-4	Q336	D-6 *		
CN151	A-5	IC314	D-9	Q337	B-8 *		
CN152	A-6	IC315	B-3	Q338	B-8		
CN810	F-2	IC503	L-9	Q340	B-9 *		
CN811	F-4	IC504	E-5	Q341	B-8 *		
		IC505	J-8	Q342	A-8		
D101	K-3	IC506	K-7	Q346	A-9		
D102	K-2 *	IC508	K-8	Q347	A-9 *		
D104	K-5	IC509	J-7	Q348	B-9		
D105	K-5	IC510	K-6	Q349	C-9 *		
D108	L-8 *	IC512	F-5	Q350	D-6 *		
D112	K-2	IC513	K-8	Q351	D-5 *		
D113	K-2 *	IC514	L-9	Q352	B-8 *		
D116	K-2	IC601	D-7	Q506	L-8		
D119	J-3			Q507	K-6 *		
D120	D-2 *	PS101	D-2	Q510	K-7 *		
D301	D-8 *	PS105	L-7 *	Q516	H-7 *		
D302	A-5	PS301	A-8				
D303	A-5 *			RB101	H-9		
D308	D-7 *	Q101	K-3	RB301	C-7		
D310	D-2 *	Q102	K-3 *				
D311	A-1	Q103	K-3 *	RV101	L-1		
D312	B-1	Q104	L-2 *	RV102	E-9		
D313	B-9	Q107	H-2 *	RV301	D-9		
D314	A-7	Q108	E-6 *	RV302	C-9		
D315	B-8 *	Q109	E-6	RV303	C-9		
D316	B-8 *	Q110	J-2 *	RV304	C-9		
D317	B-8	Q114	H-2 *	RV305	D-9		
D318	A-7	Q115	F-8 *	RV500	J-9		
D319	B-7 *	Q116	H-2 *	RV502	K-9		
D320	C-8	Q117	F-8 *	RV503	J-9		
D321	B-4 *	Q118	E-8 *				
D326	A-7	Q119	H-2 *	S101	H-9		
D327	A-9	Q120	E-2 *				
D328	A-9	Q121	G-8 *	TP101	L-2		
D329	A-9	Q128	E-2 *	TP102	G-5		
D505	F-5 *	Q129	E-2 *	TP103	K-9		
D506	F-5 *	Q130	E-2 *	TP104	G-3		
D508	K-8 *	Q131	E-2 *	TP105	H-5		
D509	K-8 *	Q134	K-5 *	TP106	G-6		
		Q301	C-9 *	TP107	D-9		
E1	K-9	Q302	C-9 *	TP108	G-8		
E2	H-3	Q303	C-8 *	TP109	H-7		
E3	H-4	Q304	D-8 *	TP110	G-8		
E5	C-9	Q305	A-5 *	TP111	L-7		
		Q306	C-2 *	TP112	J-6		

* mark ; B SIDE mount

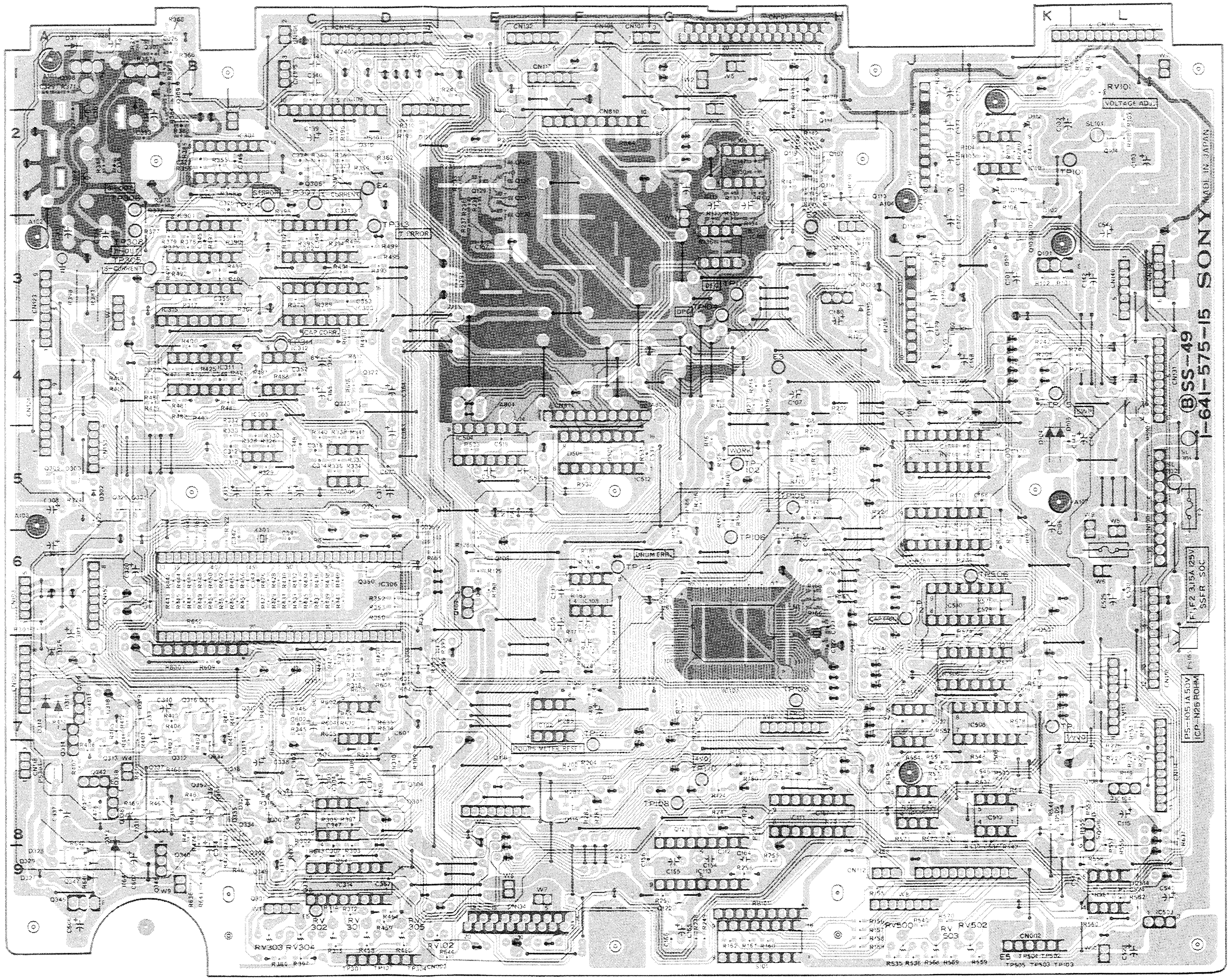
RADEAL MOUNT TYPE
TRANSISTOR
PIN LAYOUT



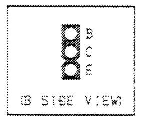



A
B
C
1
2
3
4
5
6
7
8
9
ERROR
CURRENT
E5
RV302
RV304
RV305

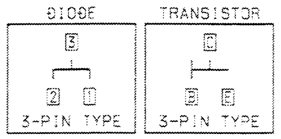
SS-49/A — A SIDE —
1-641-575-15 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


A
B
C
D
E
F
G
H
J
K
L
1
2
3
4
5
6
7
8
9
ERROR
CURRENT
CAP CORR
DRUM ERR
WORK
CAPERR
VOLTAGE ADJ.
RV101
SONY
Ⓑ SS-49
1-641-575-15
MADE IN JAPAN
F1 F2 3.15A 125V
SSFR SOC
PS-1051A 50V
ICP-N25 ROHM
RV303 RV304
RV102
RV500
RV502
E5

RADIAL MOUNT TYPE
TRANSISTOR
PIN LAYOUT


B
C
E
(B SIDE VIEW)

SURFACE MOUNT TYPE
DIODE/TRANSISTOR PIN LAYOUTS


DIODE
TRANSISTOR
3
2
1
C
B
E
3-PIN TYPE
3-PIN TYPE

13-38 (a) 13-38 (a)

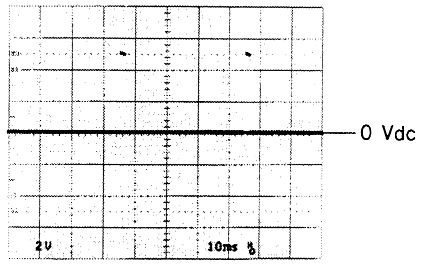
SS-49/A — B SIDE —
1-641-575-15 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

SS-49A (1/5); DRUM/CAPSTAN SERVO CONTROL, MECHANISM CONTROL VIDEO/AUDIO SYSTEM CONTROL, BACK-UP POWOR BLOCK

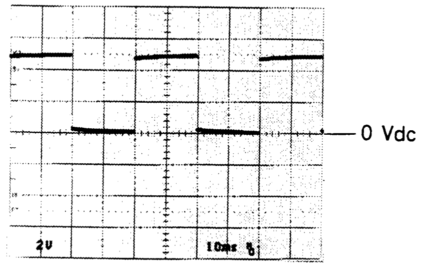
LD-35; LOADING MOTOR

CM-14; CASSETTE COMPARTMENT MOTOR

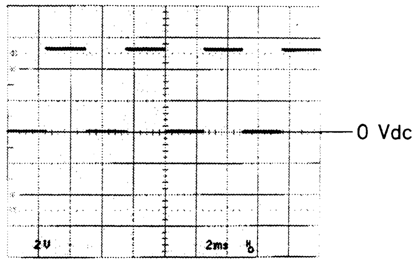
① TP104 (G-3) PB mode



⑤ TP115 (K-4) PB mode



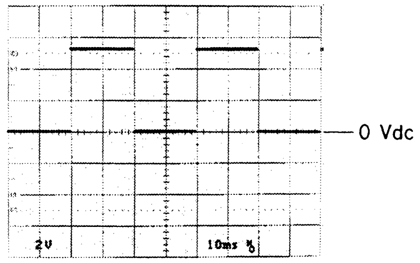
② TP110 (G-8) PB mode



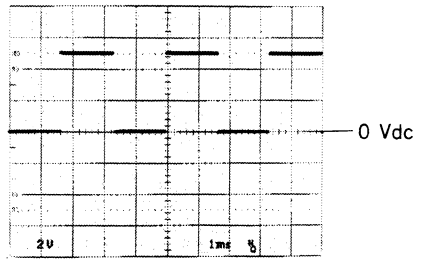
Measurement Condition

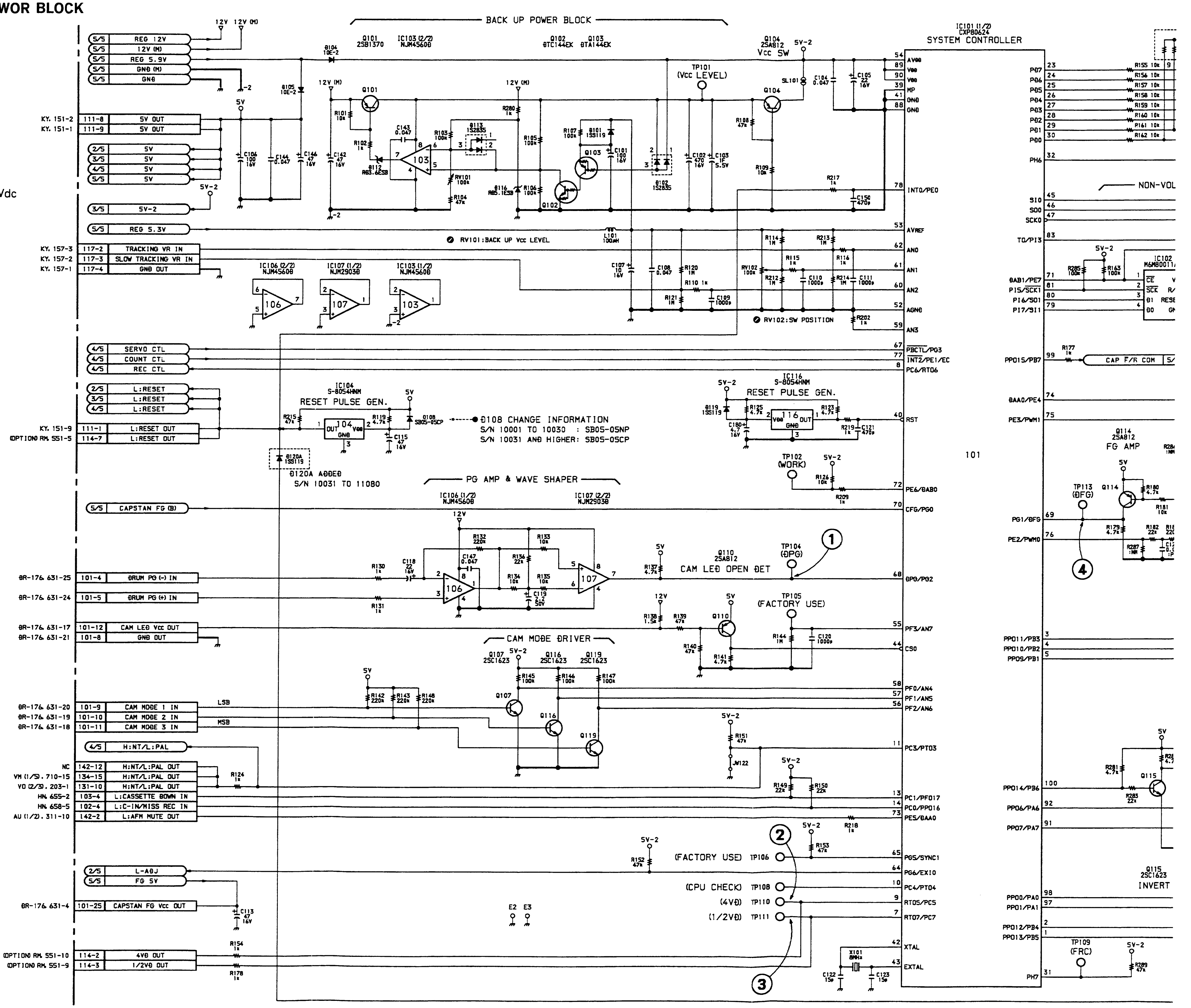
PB mode: KRV-45HPS

③ TP111 (L-7) PB mode



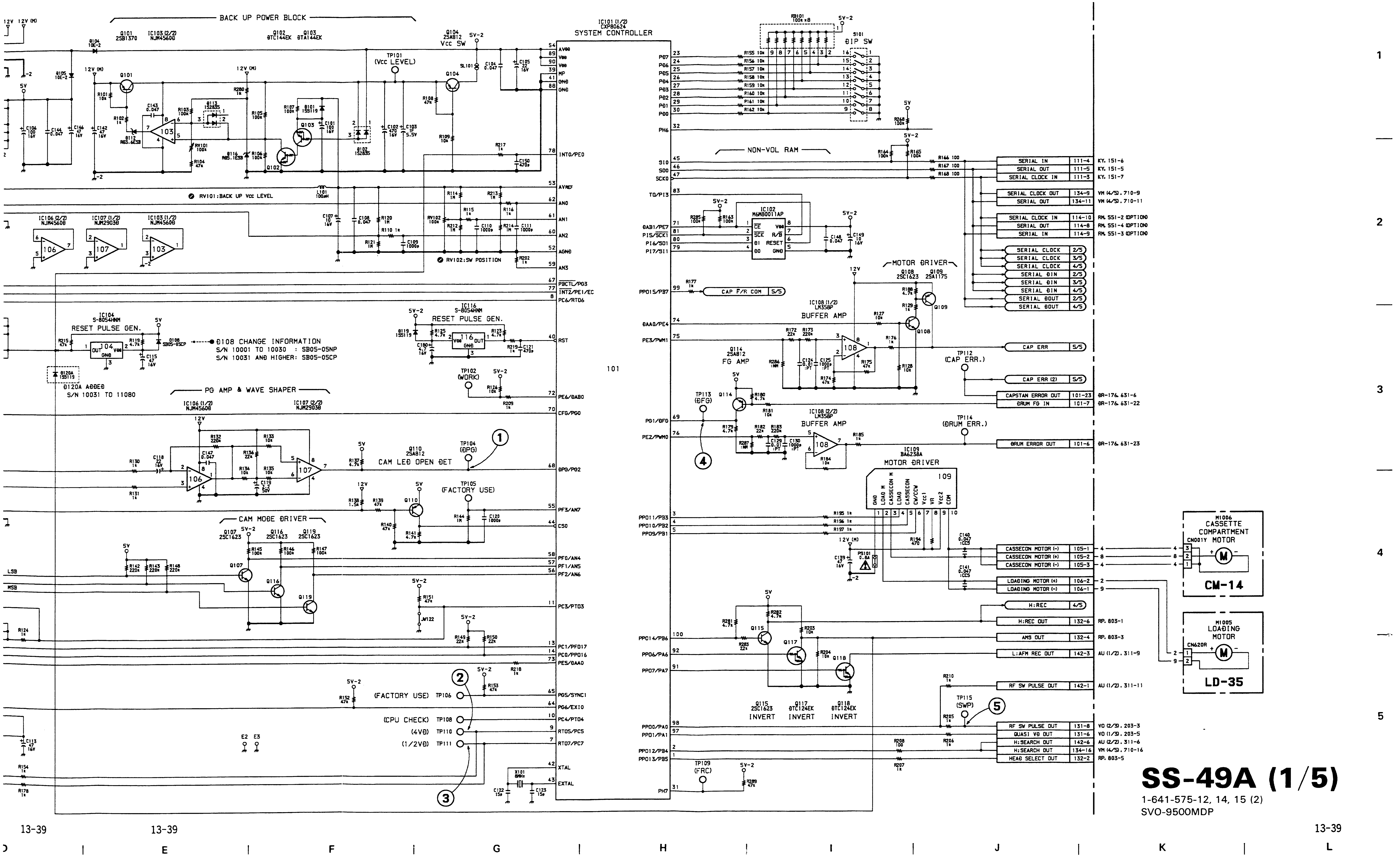
④ TP113 (G-3) PB mode




BACK UP POWER BLOCK
IC101 (1/2) CXP80624 SYSTEM CONTROLLER
REG 12V
12V (M)
REG 5.9V
GND (M)
GND
5V OUT
5V
SV-2
REG 5.3V
TRACKING VR IN
SLOW TRACKING VR IN
GND OUT
SERVO CTL
COUNT CTL
REC CTL
L:RESET
L:RESET OUT
CAPSTAN FG (B)
DRUM PG (-) IN
DRUM PG (+) IN
CAM LED Vcc OUT
CAM MODE 1 IN
CAM MODE 2 IN
CAM MODE 3 IN
H:NT/L:PAL
H:NT/L:PAL OUT
L:CASSETTE DOWN IN
L:C-IN/MISS REC IN
L:AFM MUTE OUT
L-ADJ
FG 5V
CAPSTAN FG Vcc OUT
4VD OUT
1/2VD OUT
TP101 (Vcc LEVEL)
RV101: BACK UP Vcc LEVEL
RV102: SW POSITION
IC104 S-8054HNM RESET PULSE GEN.
IC116 S-8054HNM RESET PULSE GEN.
D108 CHANGE INFORMATION
S/N 10001 TO 10030 : SB05-05NP
S/N 10031 AND HIGHER: SB05-05CP
D120A ADDED S/N 10031 TO 11080
PG AMP & WAVE SHAPER
TP102 (WORK)
TP104 (DPG)
CAM LED OPEN DET
TP105 (FACTORY USE)
CAM MODE DRIVER
(FACTORY USE) TP106
(CPU CHECK) TP108
(4VD) TP110
(1/2VD) TP111
NON-VOL
Q114 2SA812 FG AMP
TP113 (DFG)
CAP F/R COM
Q115 2SC1623 INVERT
TP109 (FRC)
101

NOTE:

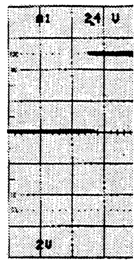
The ⚠-marked components are critical to safety.
Replace only with same components as specified.


BACK UP POWER BLOCK
Q101 2SB1370
IC103 (2/2) NJM4560D
Q102 DTC144EK
Q103 DTA144EK
Q104 2SA812 Vcc SW
TP101 (Vcc LEVEL)
IC101 (1/2) CXP80624 SYSTEM CONTROLLER
RB101 100k x8
S101 DIP SW
NON-VOL RAM
IC102 M6M80011AP
RV101:BACK UP Vcc LEVEL
RV102:SW POSITION
IC106 (2/2) NJM4560D
IC107 (1/2) NJM2903D
IC103 (1/2) NJM4560D
IC104 S-8054HNM RESET PULSE GEN.
IC116 S-8054HNM RESET PULSE GEN.
D108 CHANGE INFORMATION
S/N 10001 TO 10030 : SB05-05NP
S/N 10031 AND HIGHER: SB05-05CP
D120A ADDED
S/N 10031 TO 11080
TP102 (WORK)
PG AMP & WAVE SHAPER
IC106 (1/2) NJM4560D
IC107 (2/2) NJM2903D
Q110 2SA812
CAM LED OPEN DET
TP104 (DPG)
TP105 (FACTORY USE)
CAM MODE DRIVER
Q107 2SC1623
Q116 2SC1623
Q119 2SC1623
LSB
MSB
(FACTORY USE) TP106
(CPU CHECK) TP108
(4VD) TP110
(1/2VD) TP111
X101 8MHz
TP109 (FRC)
MOTOR DRIVER
Q108 2SC1623
Q109 2SA1175
IC108 (1/2) LM358P BUFFER AMP
Q114 2SA812 FG AMP
TP113 (DFG)
IC108 (2/2) LM358P BUFFER AMP
TP112 (CAP ERR.)
TP114 (DRUM ERR.)
IC109 BA6238A MOTOR DRIVER
Q115 2SC1623 INVERT
Q117 DTC124EK INVERT
Q118 DTC124EK INVERT
TP115 (SWP)
SERIAL IN 111-4 KY. 151-6
SERIAL OUT 111-5 KY. 151-5
SERIAL CLOCK IN 111-3 KY. 151-7
SERIAL CLOCK OUT 134-9 VM (4/5). 710-9
SERIAL OUT 134-11 VM (4/5). 710-11
SERIAL CLOCK IN 114-10 RM. 551-2 (OPTION)
SERIAL OUT 114-8 RM. 551-4 (OPTION)
SERIAL IN 114-9 RM. 551-3 (OPTION)
SERIAL CLOCK 2/5
SERIAL CLOCK 3/5
SERIAL CLOCK 4/5
SERIAL DIN 2/5
SERIAL DIN 3/5
SERIAL DIN 4/5
SERIAL DOUT 2/5
SERIAL DOUT 4/5
CAP F/R COM 5/5
CAP ERR 5/5
CAP ERR (2) 5/5
CAPSTAN ERROR OUT 101-23 DR-176. 631-6
DRUM FG IN 101-7 DR-176. 631-22
DRUM ERROR OUT 101-6 DR-176. 631-23
CASSECOM MOTOR (-) 105-1
CASSECOM MOTOR (+) 105-2
CASSECOM MOTOR (-) 105-3
LOADING MOTOR (+) 106-2
LOADING MOTOR (-) 106-1
H:REC 4/5
H:REC OUT 132-6 RP. 803-1
AMS OUT 132-4 RP. 803-3
L:AFM REC OUT 142-3 AU (1/2). 311-9
RF SW PULSE OUT 142-1 AU (1/2). 311-11
RF SW PULSE OUT 131-8 VO (2/3). 203-3
QUASI VD OUT 131-6 VO (1/3). 203-5
H:SEARCH OUT 142-6 AU (2/2). 311-6
H:SEARCH OUT 134-16 VM (4/5). 710-16
HEAD SELECT OUT 132-2 RP. 803-5
M1006 CASSETTE COMPARTMENT MOTOR
CN001Y
CM-14
M1005 LOADING MOTOR
CN620R
LD-35
101
①
②
③
④
⑤
1
2
3
4
5
D
E
F
G
H
I
J
K
L

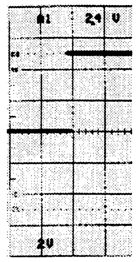
SS-49A (1/5)

1-641-575-12, 14, 15 (2)
SVO-9500MDP

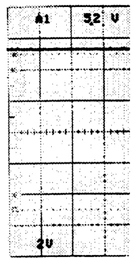
① CN151 pi



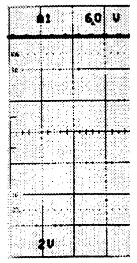
② CN151 pi



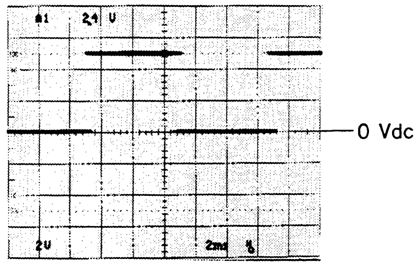
③ TP314 (C



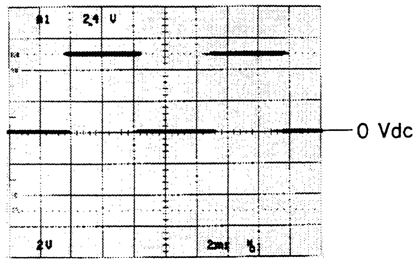
④ TP313 (D



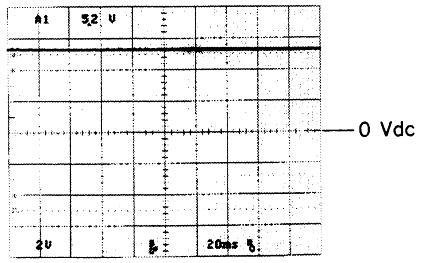
① CN151 pin 4 (A-5) PB mode



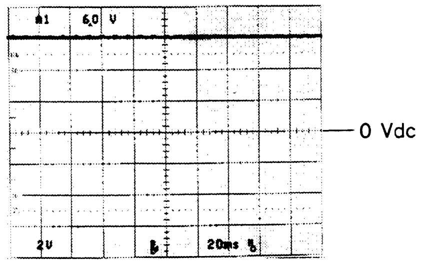
② CN151 pin 5 (A-5) PB mode



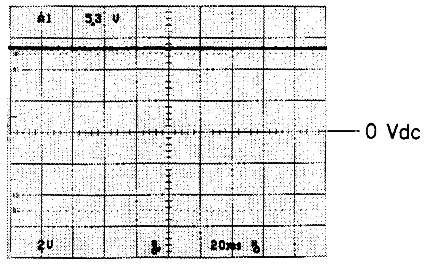
③ TP314 (C-2) PB mode



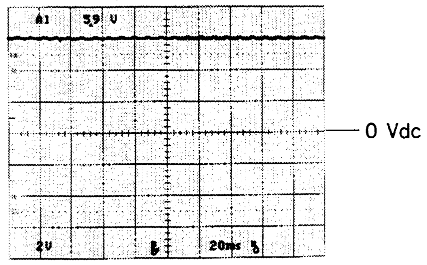
④ TP313 (D-3) PB mode



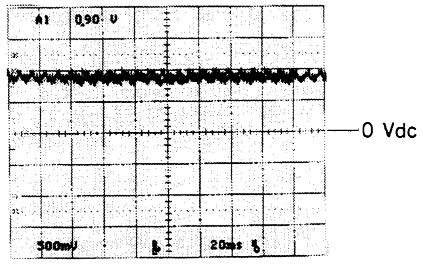
⑤ TP305 (B-3) PB mode



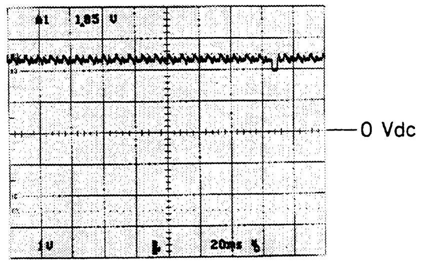
⑥ TP307 (C-2) PB mode



⑦ TP306 (B-2) PB mode

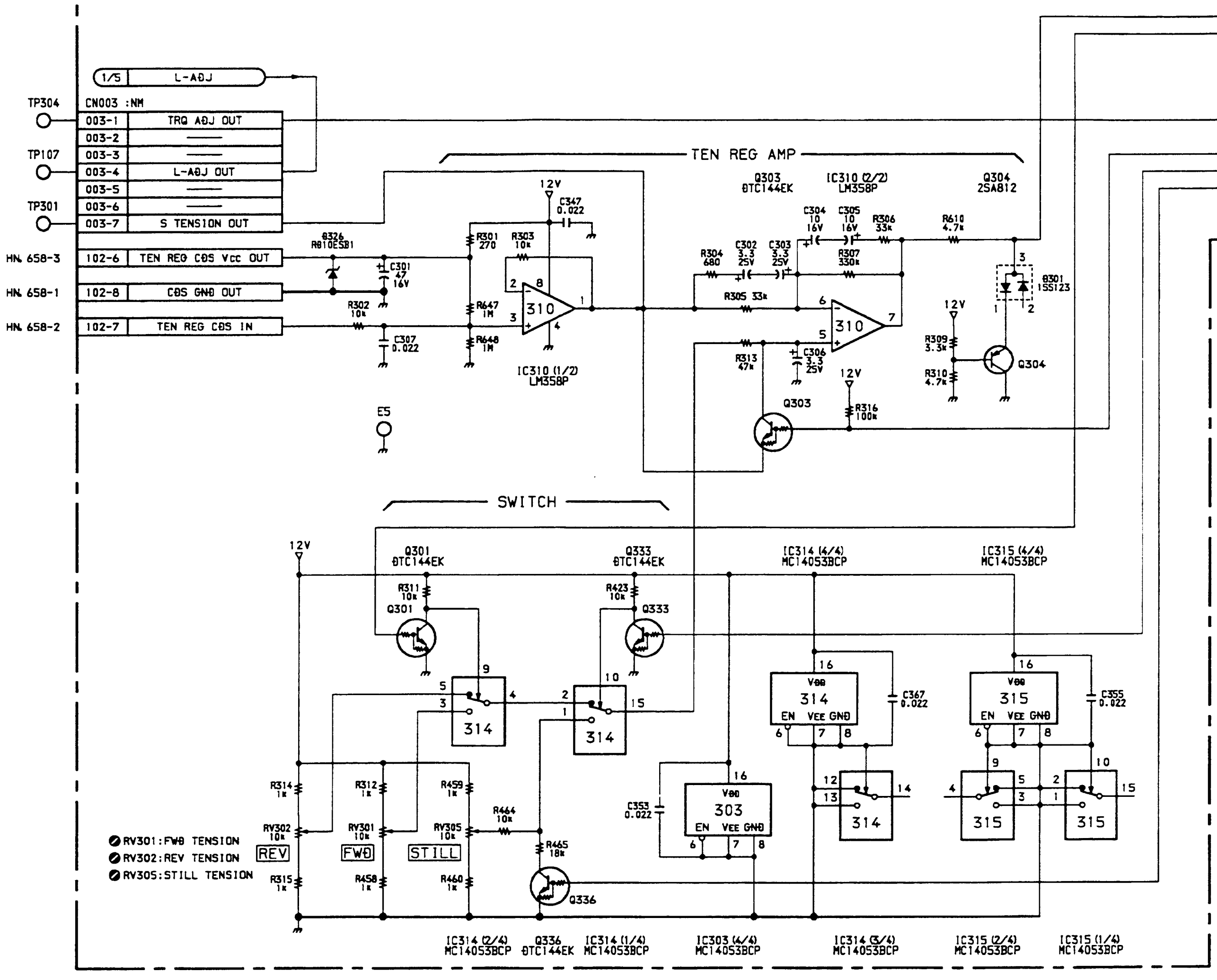


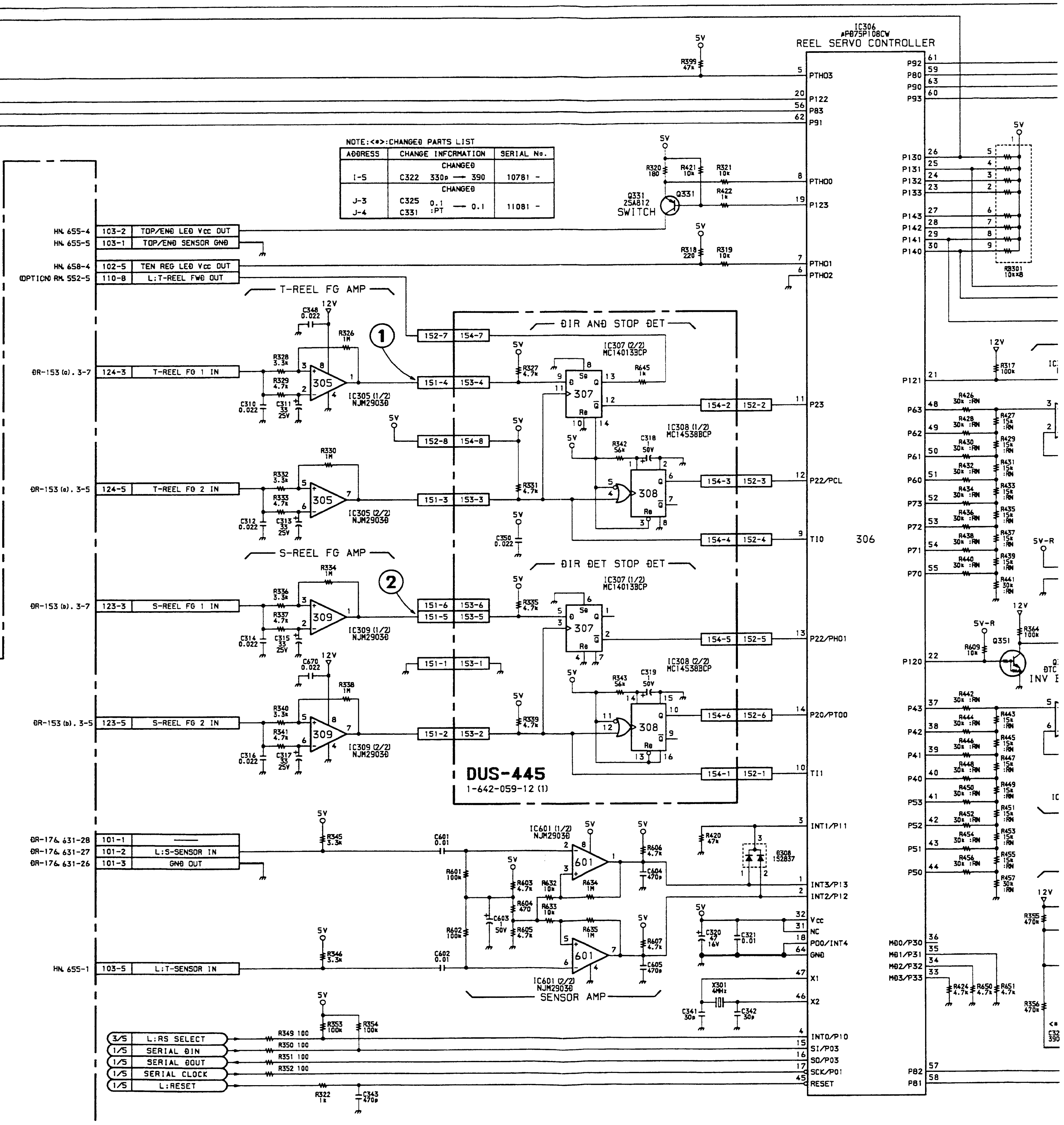
⑧ TP308 (B-3) PB mode



Measurement Condition
PB mode: KRV-45HPS

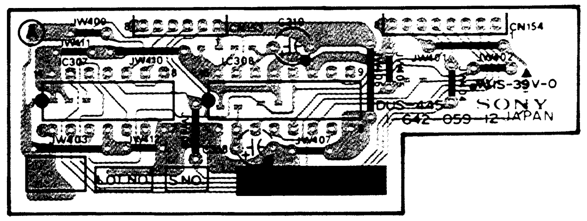
SS-49A (2/5); REEL SERVO CONTROL
DUS-445; REEL DIRECTION & STOP DETECT


L-ADJ
TP304
CN003 :NM
TRQ ADJ OUT
TP107
L-ADJ OUT
TP301
S TENSION OUT
TEN REG CBS Vcc OUT
CBS GND OUT
TEN REG CBS IN
TEN REG AMP
Q303 DTC144EK
IC310 (2/2) LM358P
Q304 2SA812
IC310 (1/2) LM358P
D301 1SS123
E5
SWITCH
Q301 DTC144EK
Q333 DTC144EK
IC314 (4/4) MC14053BCP
IC315 (4/4) MC14053BCP
RV301:FWD TENSION
RV302:REV TENSION
RV305:STILL TENSION
REV
FWD
STILL
Q336
IC314 (2/4) MC14053BCP
Q336 DTC144EK
IC314 (1/4) MC14053BCP
IC303 (4/4) MC14053BCP
IC314 (3/4) MC14053BCP
IC315 (2/4) MC14053BCP
IC315 (1/4) MC14053BCP

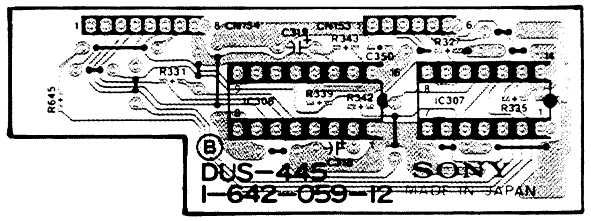

IC306 μPD75P108CW
REEL SERVO CONTROLLER
Q331 2SA812 SWITCH
TOP/END LED Vcc OUT
TOP/END SENSOR GND
TEN REG LED Vcc OUT
L:T-REEL FWD OUT
T-REEL FG AMP
T-REEL FG 1 IN
T-REEL FG 2 IN
IC305 (1/2) NJM2903D
IC305 (2/2) NJM2903D
S-REEL FG AMP
S-REEL FG 1 IN
S-REEL FG 2 IN
IC309 (1/2) NJM2903D
IC309 (2/2) NJM2903D
①
②
DIR AND STOP DET
IC307 (2/2) MC14013BCP
IC308 (1/2) MC14538BCP
DIR DET STOP DET
IC307 (1/2) MC14013BCP
IC308 (2/2) MC14538BCP
DUS-445
1-642-059-12 (1)
L:S-SENSOR IN
GND OUT
L:T-SENSOR IN
IC601 (1/2) NJM2903D
IC601 (2/2) NJM2903D
SENSOR AMP
D602 1SS237
X301 4MHz
L:RS SELECT
SERIAL DIN
SERIAL DOUT
SERIAL CLOCK
L:RESET
PTH03
P122
P83
P91
PTH00
P123
PTH01
PTH02
P23
P22/PCL
TI0
306
P22/PHO1
P20/PTO0
TI1
INT1/P11
INT3/P13
INT2/P12
Vcc
NC
P00/INT4
GND
X1
X2
INT0/P10
SI/P03
SO/P03
SCK/P01
RESET
Q351
INV

NOTE:<*>:CHANGED PARTS LIST

ADDRESS	CHANGE INFORMATION	SERIAL No.
I-5	CHANGED C322 330p → 390	10781 -
J-3 J-4	CHANGED C325 0.1 :PT → 0.1 C331	11081 -

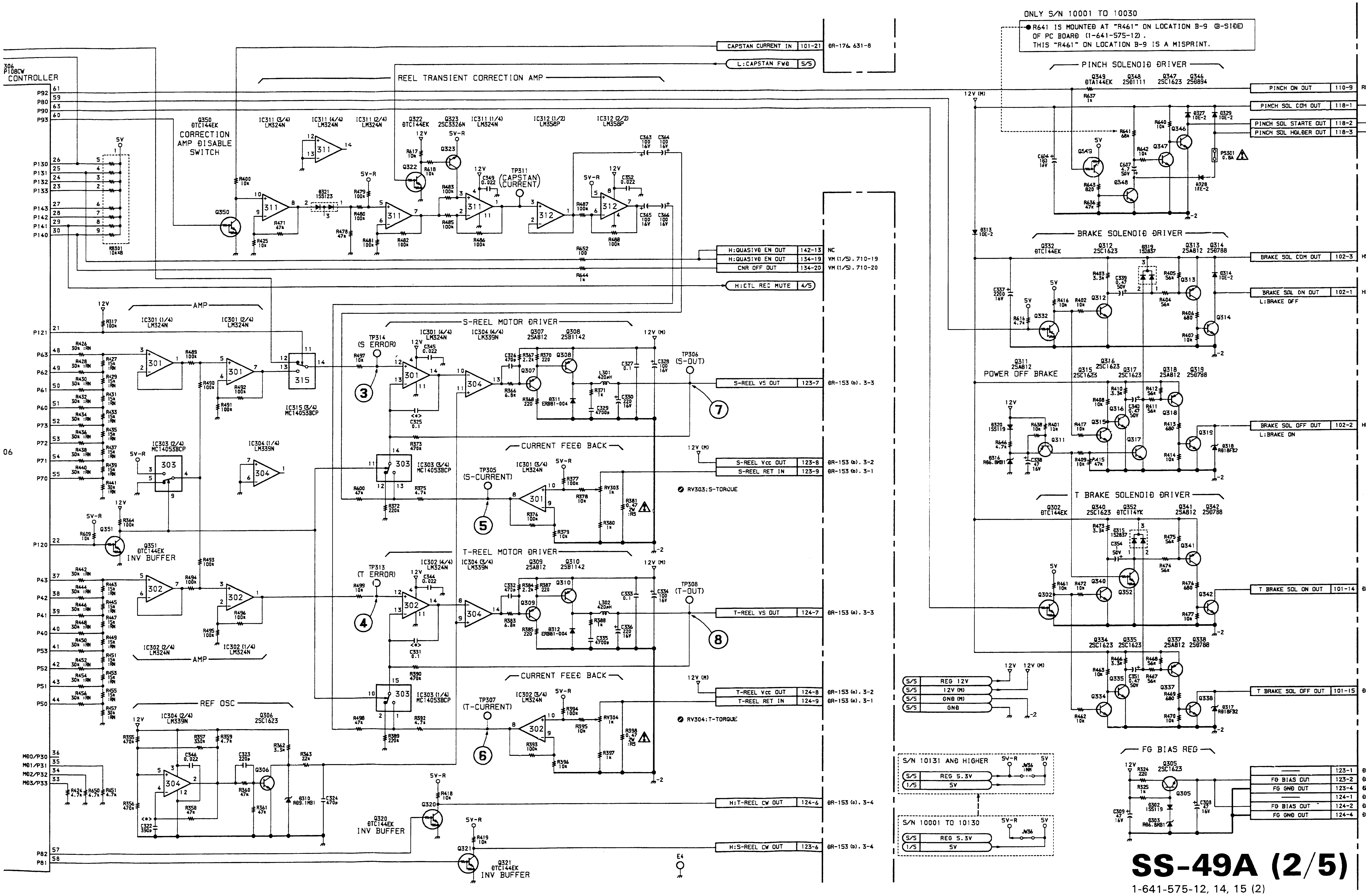


DUS-445 — A SIDE —
1-642-059-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP



DUS-445 — B SIDE —
1-642-059-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

NOTE:
The ⚠-marked components are critical to safety.
Replace only with same components as specified.



ONLY S/N 10001 TO 10030
R641 IS MOUNTED AT "R461" ON LOCATION B-9 (B-SIDE) OF PC BOARD (1-641-575-12).
THIS "R461" ON LOCATION B-9 IS A MISPRINT.
306 P108CW CONTROLLER
REEL TRANSIENT CORRECTION AMP
CAPSTAN CURRENT IN
L:CAPSTAN FWD
Q350 DTC144EK CORRECTION AMP DISABLE SWITCH
IC311 (3/4) LM324N
IC311 (4/4) LM324N
IC311 (2/4) LM324N
IC311 (1/4) LM324N
IC312 (1/2) LM358P
IC312 (2/2) LM358P
TP311 (CAPSTAN CURRENT)
H:QUASIVD EN OUT
CNR OFF OUT
H:CTL REC MUTE
PINCH SOLENOID DRIVER
PINCH ON OUT
PINCH SOL COM OUT
PINCH SOL STARTE OUT
PINCH SOL HOLDER OUT
PM1002 PINCH SOL.
BRAKE SOLENOID DRIVER
BRAKE SOL COM OUT
BRAKE SOL ON OUT
L:BRAKE OFF
POWER OFF BRAKE
BRAKE SOL OFF OUT
L:BRAKE ON
T BRAKE SOLENOID DRIVER
T BRAKE SOL ON OUT
T BRAKE SOL OFF OUT
AMP
IC301 (1/4) LM324N
IC301 (2/4) LM324N
IC315 (3/4) MC14053BCP
S-REEL MOTOR DRIVER
TP314 (S ERROR)
TP306 (S-OUT)
S-REEL VS OUT
CURRENT FEED BACK
TP305 (S-CURRENT)
S-REEL Vcc OUT
S-REEL RET IN
RV303:S-TORQUE
IC303 (2/4) MC14053BCP
IC304 (1/4) LM339N
Q351 DTC144EK INV BUFFER
T-REEL MOTOR DRIVER
TP313 (T ERROR)
TP308 (T-OUT)
T-REEL VS OUT
TP307 (T-CURRENT)
T-REEL Vcc OUT
T-REEL RET IN
RV304:T-TORQUE
IC302 (2/4) LM324N
IC302 (1/4) LM324N
REF OSC
IC304 (2/4) LM339N
Q306 2SC1623
H:T-REEL CW OUT
H:S-REEL CW OUT
Q320 DTC144EK INV BUFFER
Q321 DTC144EK INV BUFFER
REG 12V
12V (M)
GND (M)
GND
S/N 10131 AND HIGHER
S/N 10001 TO 10130
REG 5.3V
5V
FG BIAS REG
FG BIAS OUT
FG GND OUT

SS-49A (2/5)

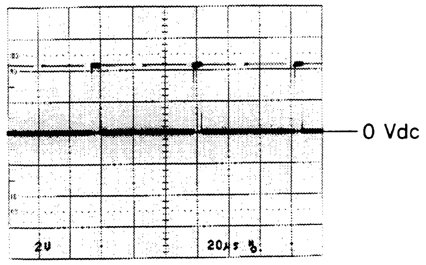
1-641-575-12, 14, 15 (2)

SVO-9500MDP

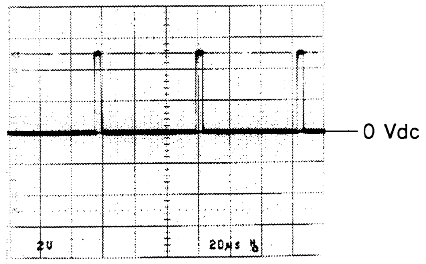
SS-49A (3/5)

SS-49A (3/5) ; VIDEO/AUDIO SYSTEM CONTROL DEW SENSE DETECT CNR/VIDEO MEMO

① CN134 pin 13 (E-9) STOP (E-E) mode



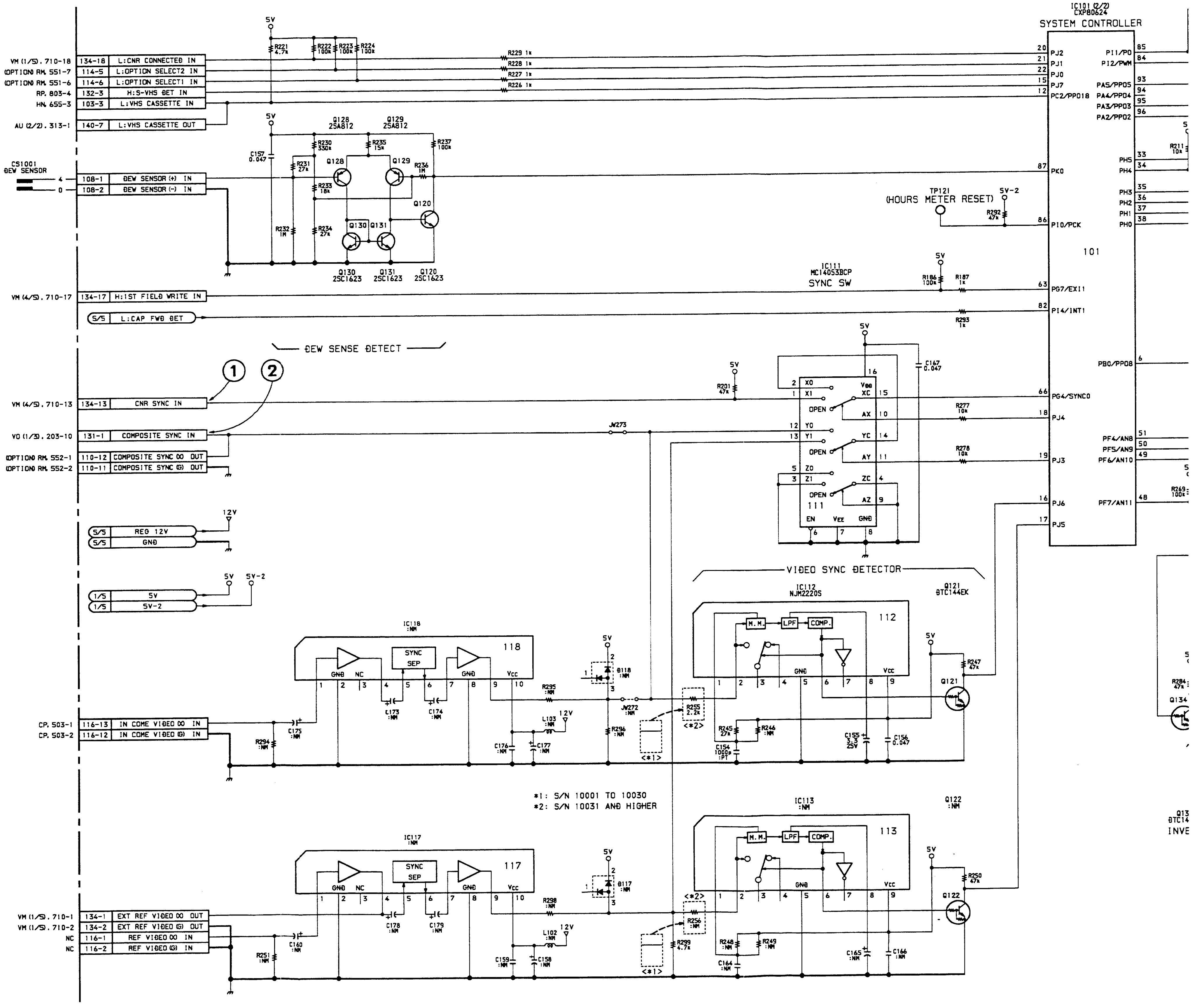
② CN131 pin 1 (L-4) STOP (E-E) mode



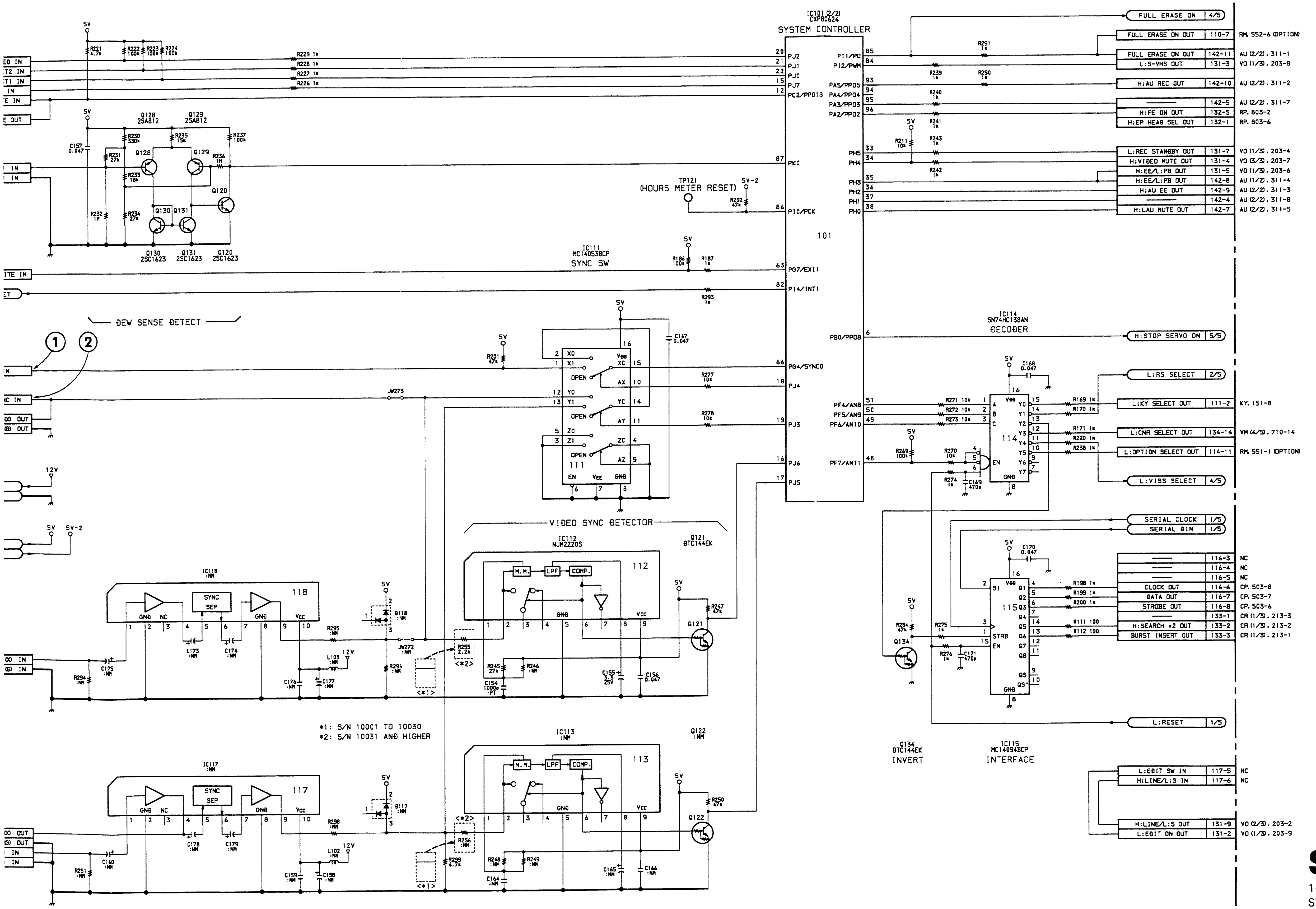
Measurement Condition

S-VIDEO IN: 75% color bars

STOP (E-E) mode: S-VHS


IC101 (2/2)
CXP80624
SYSTEM CONTROLLER
101
L:CNR CONNECTED IN
L:OPTION SELECT2 IN
L:OPTION SELECT1 IN
H:S-VHS DET IN
L:VHS CASSETTE IN
L:VHS CASSETTE OUT
CS1001
DEW SENSOR
DEW SENSOR (+) IN
DEW SENSOR (−) IN
Q128 2SA812
Q129 2SA812
Q130 2SC1623
Q131 2SC1623
Q120 2SC1623
DEW SENSE DETECT
TP121 (HOURS METER RESET)
IC111 MC14053BCP
SYNC SW
H:1ST FIELD WRITE IN
L:CAP FWD DET
CNR SYNC IN
COMPOSITE SYNC IN
COMPOSITE SYNC (Y) OUT
COMPOSITE SYNC (C) OUT
①
②
REG 12V
GND
5V
5V-2
12V
VIDEO SYNC DETECTOR
IC112 NJM2220S
Q121 DTC144EK
M.M.
LPF
COMP.
IC118 :NM
SYNC SEP
IN COME VIDEO (Y) IN
IN COME VIDEO (C) IN
*1: S/N 10001 TO 10030
*2: S/N 10031 AND HIGHER
IC113 :NM
Q122 :NM
IC117 :NM
EXT REF VIDEO (Y) OUT
EXT REF VIDEO (C) OUT
REF VIDEO (Y) IN
REF VIDEO (C) IN
INVE

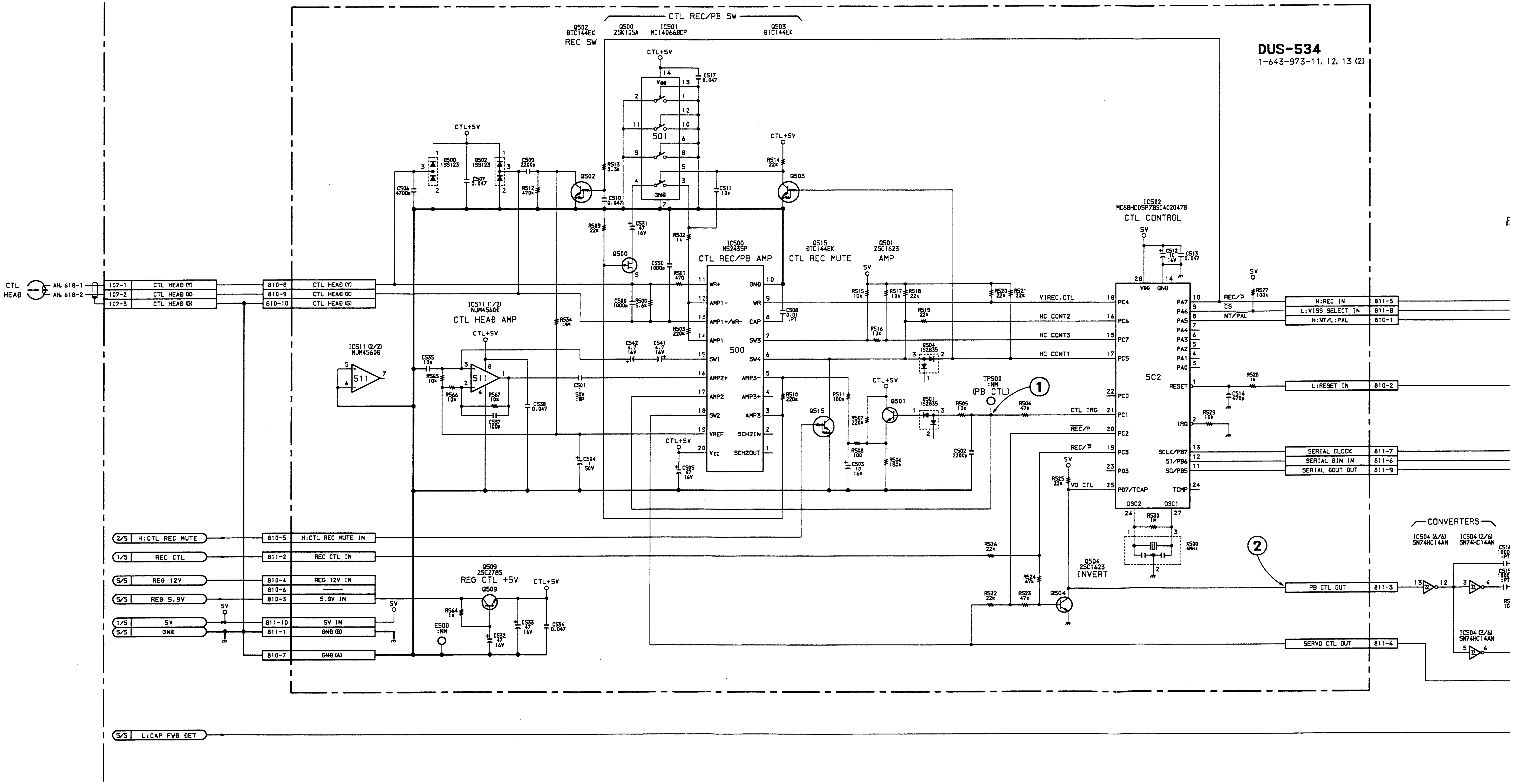
13-43


IC101 (2/2)
CXP80624
SYSTEM CONTROLLER
101
PJ2
PJ1
PJ0
PJ7
PC2/PPD18
PK0
PI0/PCK
PG7/EXI1
PI4/INT1
PG4/SYNCO
PJ4
PJ3
PJ6
PJ5
P11/P0
P12/PWM
PA5/PPD5
PA4/PPD4
PA3/PPD3
PA2/PPD2
PH5
PH4
PH3
PH2
PH1
PH0
PB0/PPD8
PF4/AN8
PF5/AN9
PF6/AN10
PF7/AN11
TP121
(HOURS METER RESET)
5V
5V-2
12V
Q128 2SA812
Q129 2SA812
Q130 2SC1623
Q131 2SC1623
Q120 2SC1623
DEW SENSE DETECT
①
②
IC111
MC14053BCP
SYNC SW
111
OPEN
JW273
IC114
SN74HC138AN
DECODER
114
IC115
MC14094BCP
INTERFACE
115
Q134
DTC144EK
INVERT
VIDEO SYNC DETECTOR
IC112
NJM2220S
112
M.M.
LPF
COMP.
Q121
DTC144EK
IC118
:NM
118
SYNC SEP
GND
NC
Vcc
IC113
:NM
113
Q122
:NM
IC117
:NM
117
*1: S/N 10001 TO 10030
*2: S/N 10031 AND HIGHER
<*1>
<*2>
FULL ERASE ON 4/5
FULL ERASE ON OUT 110-7 RM. 552-6 (OPTION)
FULL ERASE ON OUT 142-11 AU (2/2). 311-1
L:S-VHS OUT 131-3 VO (1/3). 203-8
H:AU REC OUT 142-10 AU (2/2). 311-2
142-5 AU (2/2). 311-7
H:FE ON OUT 132-5 RP. 803-2
H:EP HEAD SEL OUT 132-1 RP. 803-6
L:REC STANDBY OUT 131-7 VO (1/3). 203-4
H:VIDEO MUTE OUT 131-4 VO (3/3). 203-7
H:EE/L:PB OUT 131-5 VO (1/3). 203-6
H:EE/L:PB OUT 142-8 AU (1/2). 311-4
H:AU EE OUT 142-9 AU (2/2). 311-3
142-4 AU (2/2). 311-8
H:LAU MUTE OUT 142-7 AU (2/2). 311-5
H:STOP SERVO ON 5/5
L:RS SELECT 2/5
L:KY SELECT OUT 111-2 KY. 151-8
L:CNR SELECT OUT 134-14 VM (4/5). 710-14
L:OPTION SELECT OUT 114-11 RM. 551-1 (OPTION)
L:VISS SELECT 4/5
SERIAL CLOCK 1/5
SERIAL DIN 1/5
116-3 NC
116-4 NC
116-5 NC
CLOCK OUT 116-6 CP. 503-8
DATA OUT 116-7 CP. 503-7
STROBE OUT 116-8 CP. 503-6
133-1 CR (1/3). 213-3
H:SEARCH ×2 OUT 133-2 CR (1/3). 213-2
BURST INSERT OUT 133-3 CR (1/3). 213-1
L:RESET 1/5
L:EDIT SW IN 117-5 NC
H:LINE/L:S IN 117-6 NC
H:LINE/L:S OUT 131-9 VO (2/3). 203-2
L:EDIT ON OUT 131-2 VO (1/3). 203-9
1
2
3
4
5

SS-49A (3/5)

1-641-575-12, 14, 15 (2)
SVO-9500MDP

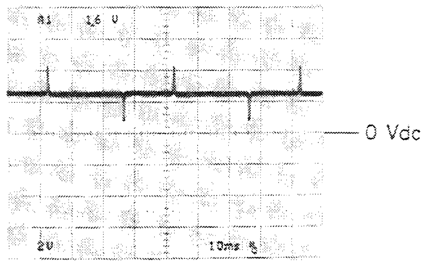
SS-49A (4/5)
DUS-534 ; VISS CONTROL CTL HEAD AMP


DUS-534
1-643-973-11, 12, 13 (2)
CTL REC/PB SW
Q502 DTC144EK REC SW
Q500 2SK105A
IC501 MC14066BCP
Q503 DTC144EK
CTL+5V
IC500 M52435P CTL REC/PB AMP
Q515 DTC144EK CTL REC MUTE
Q501 2SC1623 AMP
IC502 MC68HC05P7BSC402047B CTL CONTROL
IC511 (1/2) NJM4560D CTL HEAD AMP
IC511 (2/2) NJM4560D
Q509 2SC2785 REG CTL +5V
Q504 2SC1623 INVERT
TP500 :NM (PB CTL)
①
②
CTL HEAD
AH. 618-1
AH. 618-2
107-1 CTL HEAD (Y)
107-2 CTL HEAD (X)
107-3 CTL HEAD (G)
810-8 CTL HEAD (Y)
810-9 CTL HEAD (X)
810-10 CTL HEAD (G)
(2/5) H:CTL REC MUTE
(1/5) REC CTL
(5/5) REG 12V
(5/5) REG 5.9V
(1/5) 5V
(5/5) GND
810-5 H:CTL REC MUTE IN
811-2 REC CTL IN
810-4 REG 12V IN
810-6
810-3 5.9V IN
811-10 5V IN
811-1 GND (D)
810-7 GND (A)
E500 :NM
(5/5) L:CAP FWD DET
VIREC.CTL
HC CONT2
HC CONT3
HC CONT1
CTL TRG
REC/P
REC/P
VD CTL
REC/P
CS
NT/PAL
H:REC IN 811-5
L:VISS SELECT IN 811-8
H:NT/L:PAL 810-1
L:RESET IN 810-2
SERIAL CLOCK 811-7
SERIAL DIN IN 811-6
SERIAL DOUT OUT 811-9
PB CTL OUT 811-3
SERVO CTL OUT 811-4
CONVERTERS
IC504 (6/6) SN74HC14AN
IC504 (2/6) SN74HC14AN
IC504 (3/6) SN74HC14AN
X500 4MHz
500
501
502
511
D500 1SS123
D502 1SS123
D501 1SS355
D504 1SS355

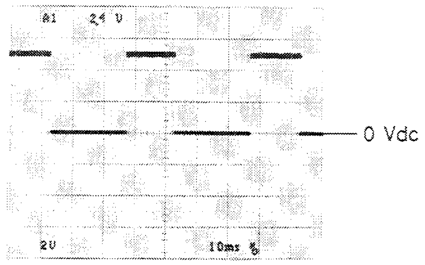
A | B | C | D | E | F | G | H |

SS-49A (4/5), DUS-534

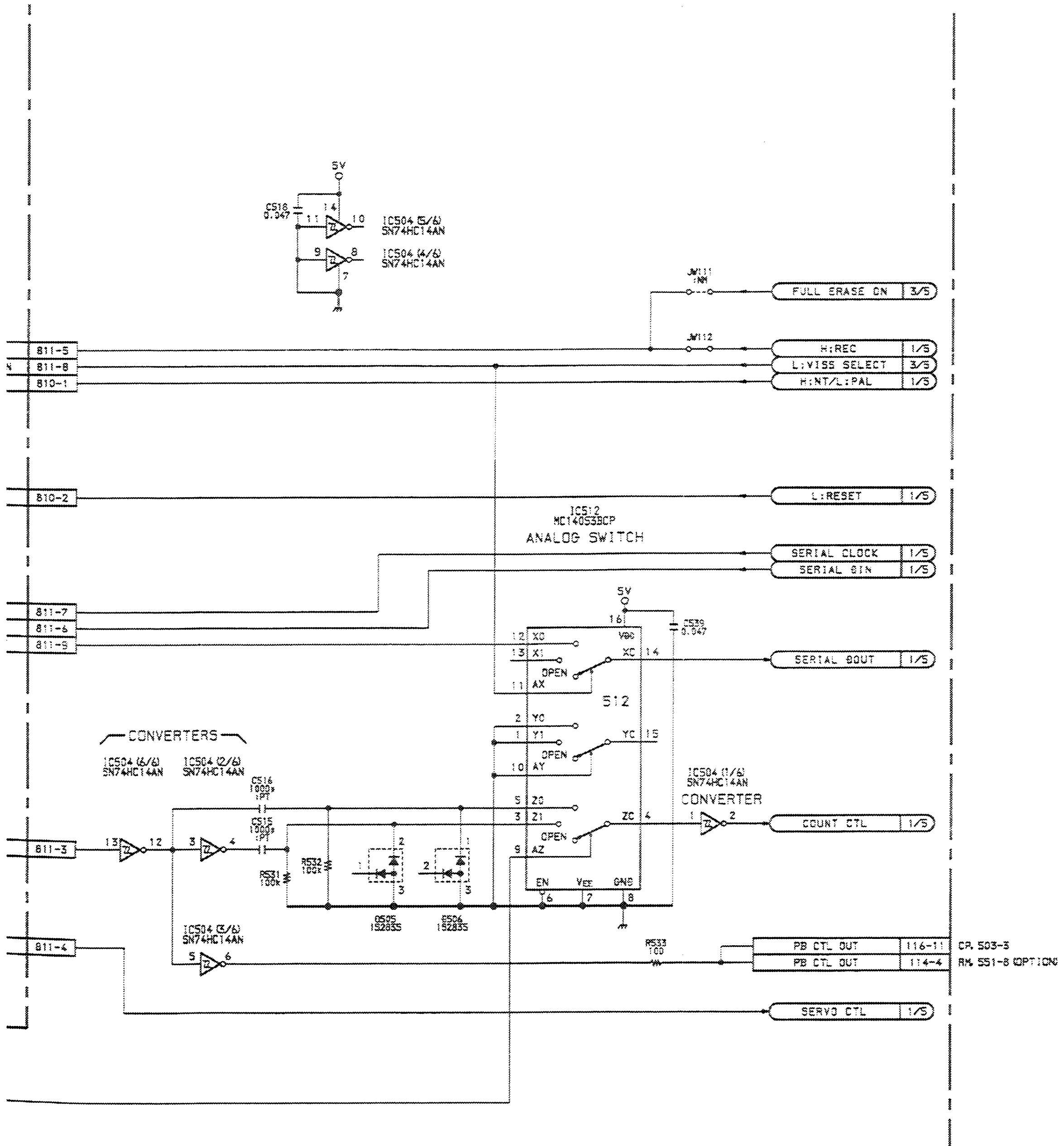
① TP500 [DUS-534 (C-1)] PB mode



② CN811 pin 3 (F-4) PB mode

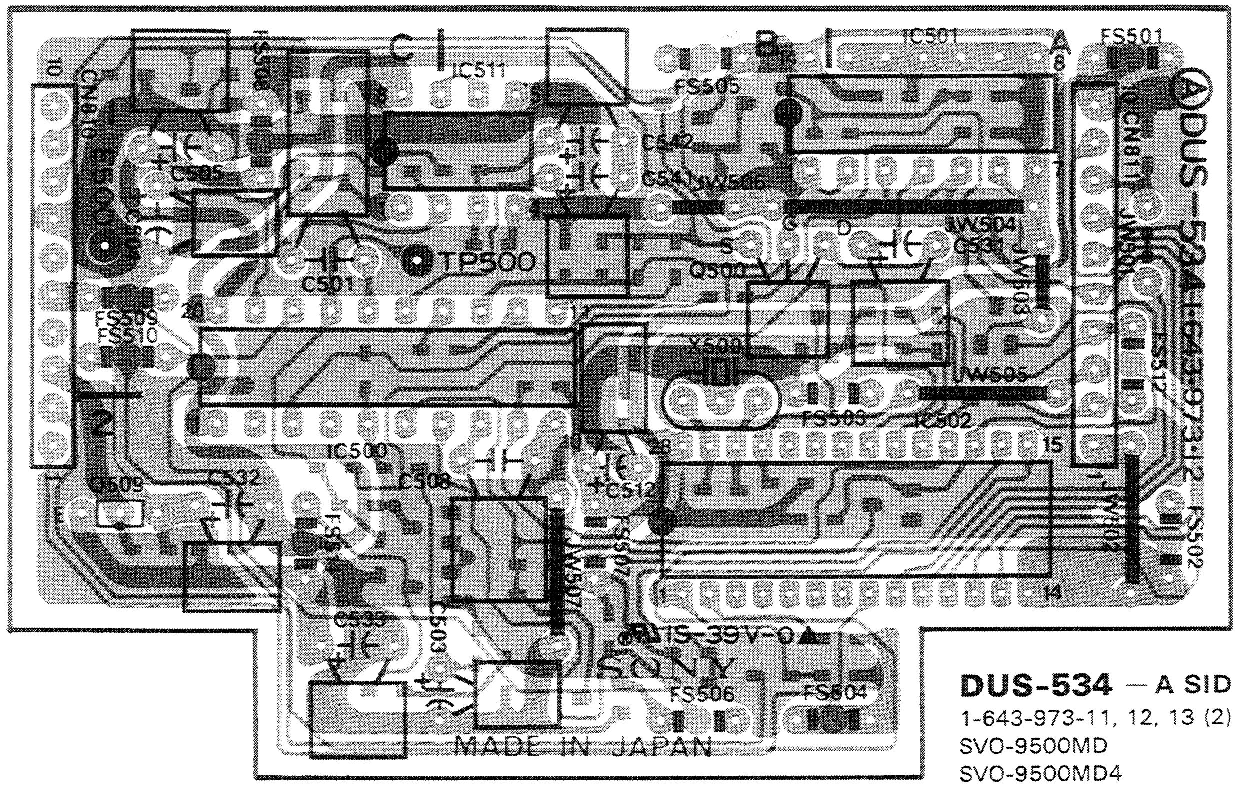


Measurement Condition
PB mode: KRV-45HPS

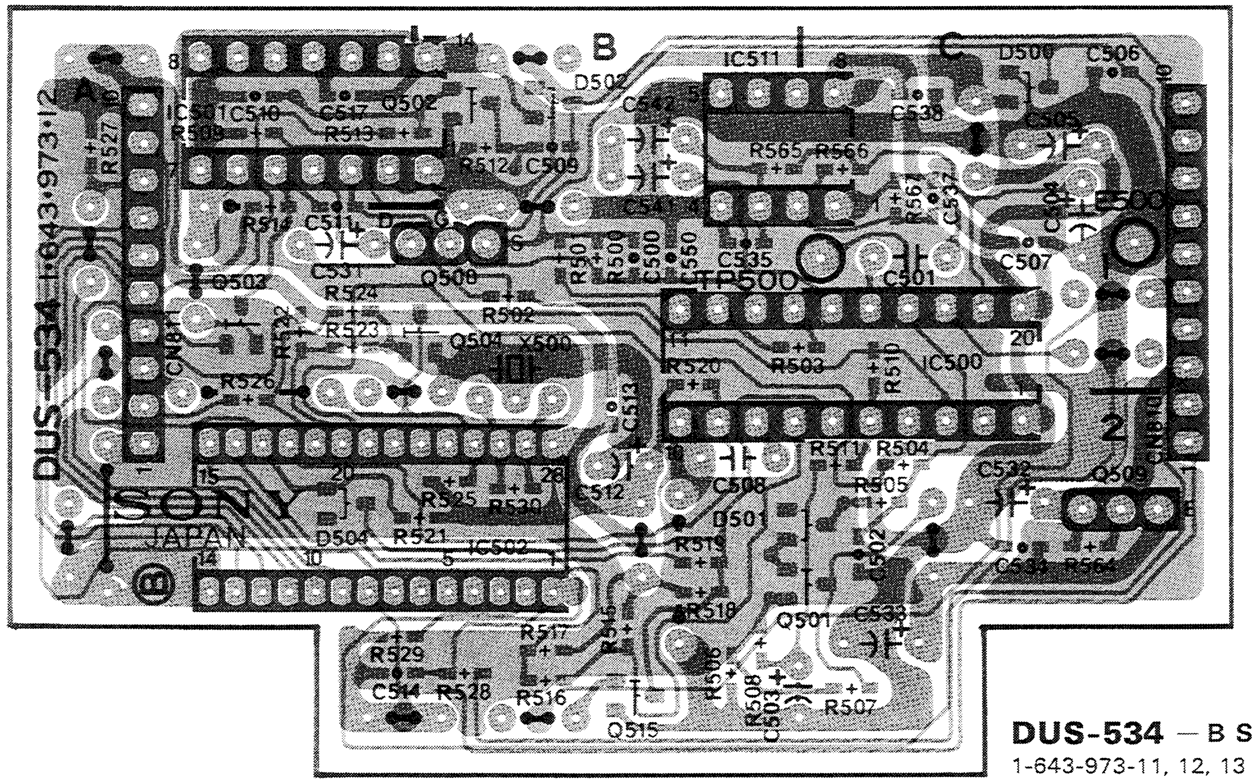

5V
IC504 (5/6) SN74HC14AN
IC504 (4/6) SN74HC14AN
JW111
JW112
FULL ERASE ON 3/5
H:REC 1/5
L:VISS SELECT 3/5
H:NT/L:PAL 1/5
811-5
811-8
810-1
810-2
L:RESET 1/5
IC512 MC14053BCP
ANALOG SWITCH
SERIAL CLOCK 1/5
SERIAL SIN 1/5
811-7
811-6
811-5
SERIAL SOUT 1/5
CONVERTERS
IC504 (6/6) SN74HC14AN
IC504 (2/6) SN74HC14AN
IC504 (1/6) SN74HC14AN
CONVERTER
COUNT CTL 1/5
811-3
D525 1SS355
D526 1SS355
IC504 (3/6) SN74HC14AN
811-4
R533 100
PB CTL OUT 116-11 CP, S03-3
PB CTL OUT 114-4 RM, S51-8 (OPTION)
SERVO CTL 1/5
OPEN
EN
VEE
GND

SS-49A (4/5)

1-641-575-12, 14, 15 (2)
SVO-9500MDP


IC511
IC501
FS501
FS505
CN810
CN811
C505
C542
C541
JW506
JW504
C531
C501
TP500
Q500
JW503
FS509
FS510
X500
FS503
IC502
JW505
IC500
C508
C512
Q509
C532
FS512
FS502
FS507
JW507
C535
C503
IS-39V-0
SONY
FS506
FS504
MADE IN JAPAN
DUS-534 1-643-973-12

DUS-534 — A SIDE —
1-643-973-11, 12, 13 (2)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


B
IC511
C
D500
C506
D502
C542
C510
C517
Q502
R527
R508
R513
R512
C509
R565
R566
C541
R514
C511
C536
C504
C507
C531
Q508
R501
R500
C500
C535
TP500
C501
Q503
R524
R502
R523
Q504
X500
CN811
R526
R520
R503
R510
IC500
C513
R511
R504
R505
C512
C508
D501
C532
Q509
R525
R530
R521
IC502
D504
R519
C534
R564
SONY
JAPAN
R529
R517
R518
Q501
C533
C514
R528
R516
R506
R508
C503
R507
Q515
DUS-534 1-643-973-12

DUS-534 — B SIDE —
1-643-973-11, 12, 13 (2)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

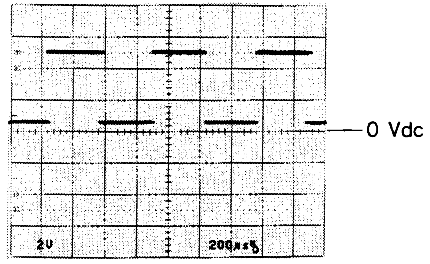
1
2
3
4
5

H | I | J | K | L | M | N | O | P

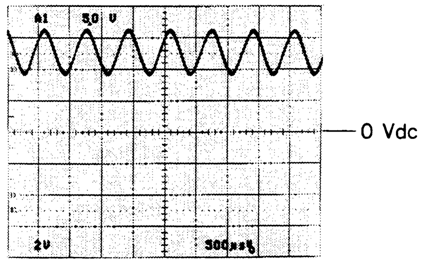
13-45

SS-49A (5/5); CAPSTAN FG AMP
POWER BLOCK

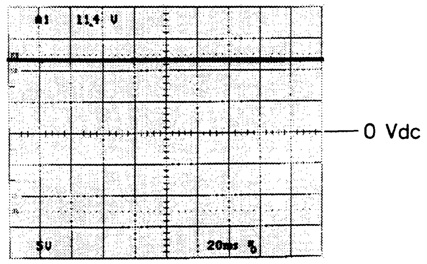
① TP103 (K-9) PB mode



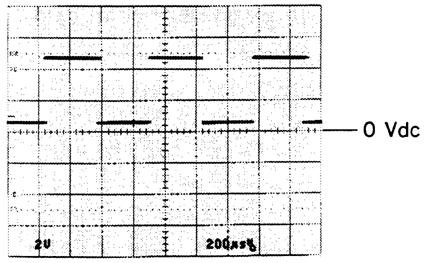
② TP503 (K-9) PB mode



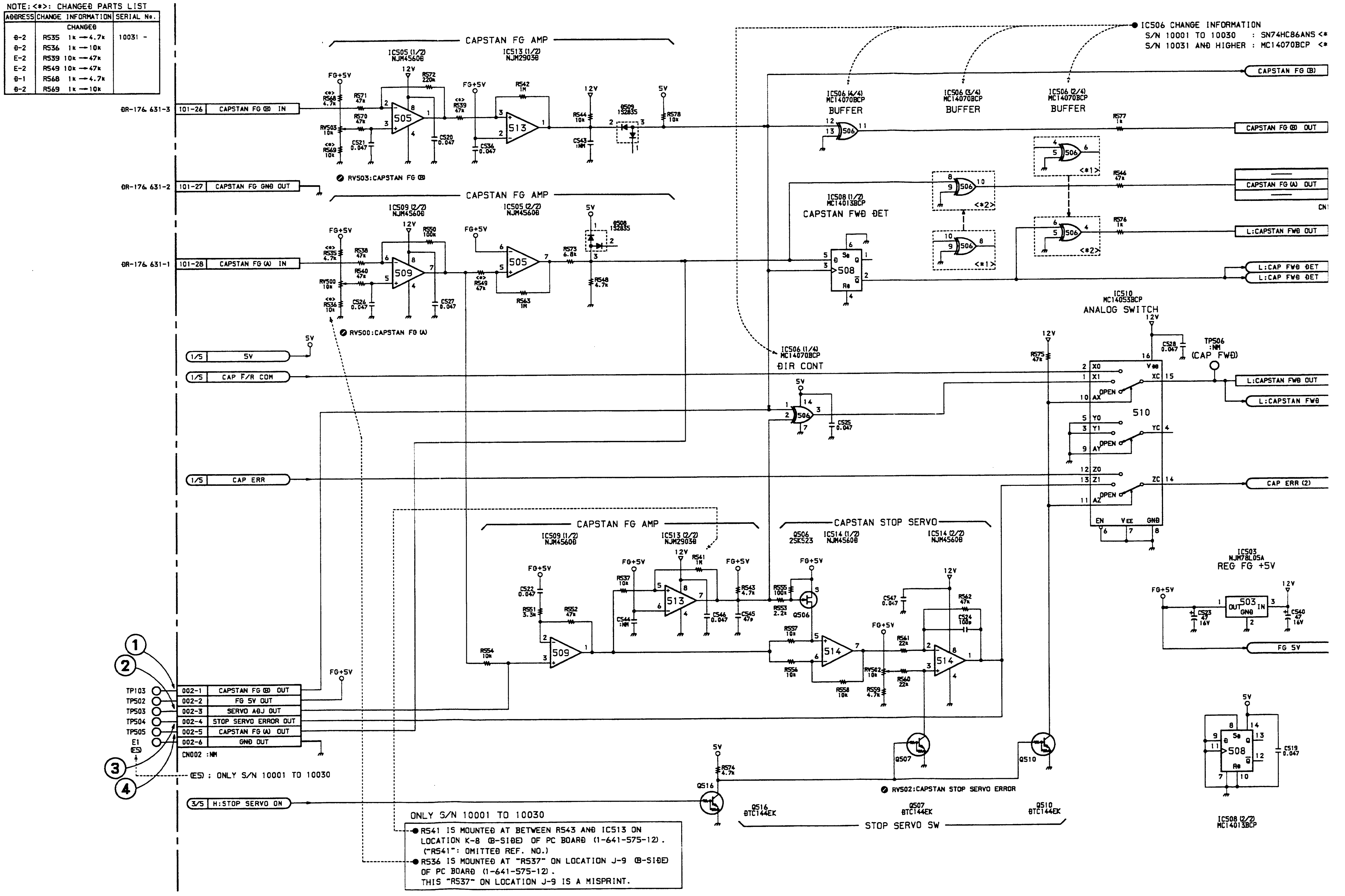
③ TP504 (K-9) PB mode



④ TP505 (K-9) PB mode



Measurement Condition
PB mode: KRV-45HPS


CAPSTAN FG AMP
IC505 (1/2) NJM4560B
IC513 (1/2) NJM2903B
IC509 (2/2) NJM4560B
IC505 (2/2) NJM4560B
IC509 (1/2) NJM4560B
IC513 (2/2) NJM2903B
CAPSTAN STOP SERVO
Q506 2SK523
IC514 (1/2) NJM4560B
IC514 (2/2) NJM4560B
FG+5V
12V
5V
RV503:CAPSTAN FG (B)
RV500:CAPSTAN FG (A)
RV502:CAPSTAN STOP SERVO ERROR
DR-176 631-3
101-26 CAPSTAN FG (B) IN
DR-176 631-2
101-27 CAPSTAN FG GND OUT
DR-176 631-1
101-28 CAPSTAN FG (A) IN
1/5 5V
1/5 CAP F/R COM
1/5 CAP ERR
3/5 H:STOP SERVO ON
TP103
TP502
TP503
TP504
TP505
E1
(E5)
002-1 CAPSTAN FG (B) OUT
002-2 FG 5V OUT
002-3 SERVO ADJ OUT
002-4 STOP SERVO ERROR OUT
002-5 CAPSTAN FG (A) OUT
002-6 GND OUT
CN002 :NM
(E5) : ONLY S/N 10001 TO 10030
Q516 DTC144EK
Q507 DTC144EK
Q510 DTC144EK
STOP SERVO SW
IC506 (4/4) MC14070BCP BUFFER
IC506 (3/4) MC14070BCP BUFFER
IC506 (2/4) MC14070BCP BUFFER
IC508 (1/2) MC14013BCP CAPSTAN FWD DET
IC506 (1/4) MC14070BCP DIR CONT
IC510 MC14053BCP ANALOG SWITCH
TP506 :NM (CAP FWD)
IC503 NJM78L05A REG FG +5V
IC508 (2/2) MC14013BCP
CAPSTAN FG (B)
CAPSTAN FG (B) OUT
CAPSTAN FG (A) OUT
L:CAPSTAN FWD OUT
L:CAP FWD DET
L:CAP FWD DET
L:CAPSTAN FWD OUT
L:CAPSTAN FWD
CAP ERR (2)
FG 5V
<*1>
<*2>

NOTE: <*>: CHANGED PARTS LIST

ADDRESS	CHANGE INFORMATION	SERIAL No.
	CHANGED	
D-2	R535 1k → 4.7k	10031 -
D-2	R536 1k → 10k	
E-2	R539 10k → 47k	
E-2	R549 10k → 47k	
D-1	R568 1k → 4.7k	
D-2	R569 1k → 10k	

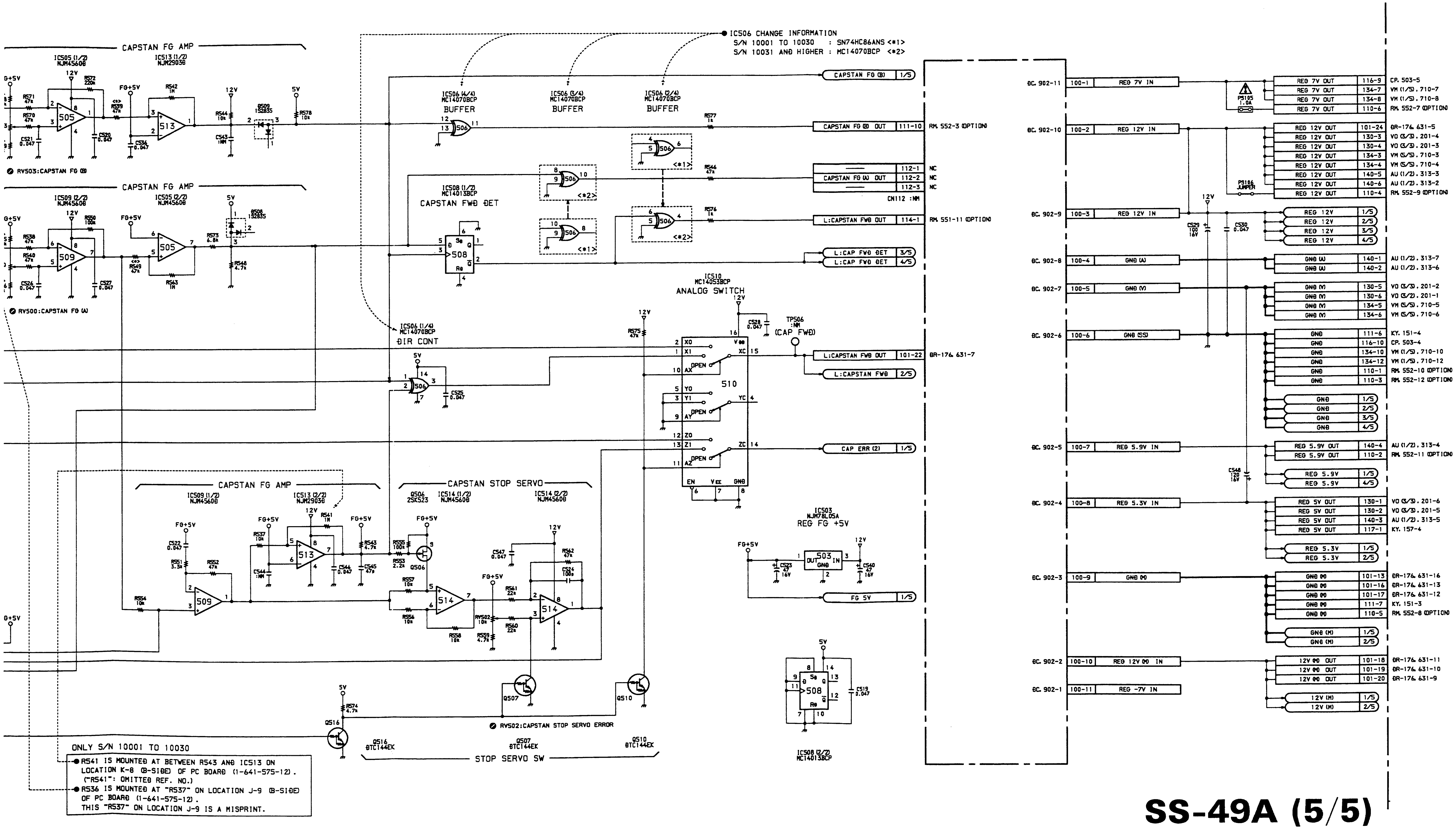
● IC506 CHANGE INFORMATION
S/N 10001 TO 10030 : SN74HC86ANS <*
S/N 10031 AND HIGHER : MC14070BCP <*

ONLY S/N 10001 TO 10030

● R541 IS MOUNTED AT BETWEEN R543 AND IC513 ON LOCATION K-8 (B-SIDE) OF PC BOARD (1-641-575-12). ("R541": OMITTED REF. NO.)

● R536 IS MOUNTED AT "R537" ON LOCATION J-9 (B-SIDE) OF PC BOARD (1-641-575-12). THIS "R537" ON LOCATION J-9 IS A MISPRINT.

NOTE:
The ⚠-marked components are critical to safety.
Replace only with same components as specified.


CAPSTAN FG AMP
IC505 (1/2) NJM4560B
IC513 (1/2) NJM2903B
505
513
12V
5V
FG+5V
G+5V
R571 47k
R570 47k
R572 220k
R539 47k
R542 1M
R544 10k
R578 10k
D509 1SS355
C521 0.047
C526 0.047
C534 0.047
C543 :NM
RV503:CAPSTAN FG (B)
CAPSTAN FG AMP
IC509 (2/2) NJM4560B
IC505 (2/2) NJM4560B
509
R538
R540
R550 100k
R549 47k
R543 1M
R573 6.8k
R548 4.7k
D508 1SS355
C524 0.047
C527 0.047
RV500:CAPSTAN FG (A)
IC506 (4/4) MC14070BCP BUFFER
IC506 (3/4) MC14070BCP BUFFER
IC506 (2/4) MC14070BCP BUFFER
506
<*1>
<*2>
R577 1k
R546 47k
R576 1k
IC508 (1/2) MC14013BCP CAPSTAN FWD DET
508
IC506 (1/4) MC14070BCP DIR CONT
C525 0.047
IC510 MC14053BCP ANALOG SWITCH
510
X0 X1 AX Y0 Y1 AY Z0 Z1 AZ XC YC ZC
OPEN
EN VEE GND
C528 0.047
TP506 :NM (CAP FWD)
R575 47k
CAPSTAN FG (B) 1/5
CAPSTAN FG (B) OUT 111-10 RM. 552-3 (OPTION)
112-1 NC
CAPSTAN FG (A) OUT 112-2 NC
112-3 NC
CN112 :NM
L:CAPSTAN FWD OUT 114-1 RM. 551-11 (OPTION)
L:CAP FWD DET 3/5
L:CAP FWD DET 4/5
L:CAPSTAN FWD OUT 101-22 DR-176. 631-7
L:CAPSTAN FWD 2/5
CAP ERR (2) 1/5
CAPSTAN FG AMP
IC509 (1/2) NJM4560B
IC513 (2/2) NJM2903B
R551 3.3k
R552 47k
R537 10k
R541 1M
R543 4.7k
C522 0.047
C544 :NM
C546 0.047
C545 47k
R554 10k
CAPSTAN STOP SERVO
Q506 2SK523
IC514 (1/2) NJM4560B
IC514 (2/2) NJM4560B
514
R555 100k
R553 2.2k
R557 10k
R556 10k
R558 10k
C547 0.047
RV502 10k
R559 4.7k
R561 22k
R560 22k
R562 47k
C524 100p
Q507
Q510
Q516
R574 4.7k
RV502:CAPSTAN STOP SERVO ERROR
Q516 DTC144EK
Q507 DTC144EK
Q510 DTC144EK
STOP SERVO SW
IC503 NJM78L05A REG FG +5V
503
OUT GND IN
C523 47 16V
C540 47 16V
FG 5V 1/5
C519 0.047
IC508 (2/2) MC14013BCP
DC. 902-11 100-1 REG 7V IN
PS105 1.0A
REG 7V OUT 116-9 CP. 503-5
REG 7V OUT 134-7 VM (1/5). 710-7
REG 7V OUT 134-8 VM (1/5). 710-8
REG 7V OUT 110-6 RM. 552-7 (OPTION)
DC. 902-10 100-2 REG 12V IN
REG 12V OUT 101-24 DR-176. 631-5
REG 12V OUT 130-3 VO (3/3). 201-4
REG 12V OUT 130-4 VO (3/3). 201-3
REG 12V OUT 134-3 VM (5/5). 710-3
REG 12V OUT 134-4 VM (5/5). 710-4
REG 12V OUT 140-5 AU (1/2). 313-3
REG 12V OUT 140-6 AU (1/2). 313-2
PS106 JUMPER
REG 12V OUT 110-4 RM. 552-9 (OPTION)
DC. 902-9 100-3 REG 12V IN
C529 100 16V
C530 0.047
REG 12V 1/5
REG 12V 2/5
REG 12V 3/5
REG 12V 4/5
DC. 902-8 100-4 GND (A)
GND (A) 140-1 AU (1/2). 313-7
GND (A) 140-2 AU (1/2). 313-6
DC. 902-7 100-5 GND (V)
GND (V) 130-5 VO (3/3). 201-2
GND (V) 130-6 VO (3/2). 201-1
GND (V) 134-5 VM (5/5). 710-5
GND (V) 134-6 VM (5/5). 710-6
DC. 902-6 100-6 GND (SS)
GND 111-6 KY. 151-4
GND 116-10 CP. 503-4
GND 134-10 VM (1/5). 710-10
GND 134-12 VM (1/5). 710-12
GND 110-1 RM. 552-10 (OPTION)
GND 110-3 RM. 552-12 (OPTION)
GND 1/5
GND 2/5
GND 3/5
GND 4/5
DC. 902-5 100-7 REG 5.9V IN
REG 5.9V OUT 140-4 AU (1/2). 313-4
REG 5.9V OUT 110-2 RM. 552-11 (OPTION)
C548 120 16V
REG 5.9V 1/5
REG 5.9V 4/5
DC. 902-4 100-8 REG 5.3V IN
REG 5V OUT 130-1 VO (3/3). 201-6
REG 5V OUT 130-2 VO (3/3). 201-5
REG 5V OUT 140-3 AU (1/2). 313-5
REG 5V OUT 117-1 KY. 157-4
REG 5.3V 1/5
REG 5.3V 2/5
DC. 902-3 100-9 GND (M)
GND (M) 101-13 DR-176. 631-16
GND (M) 101-16 DR-176. 631-13
GND (M) 101-17 DR-176. 631-12
GND (M) 111-7 KY. 151-3
GND (M) 110-5 RM. 552-8 (OPTION)
GND (M) 1/5
GND (M) 2/5
DC. 902-2 100-10 REG 12V (M) IN
12V (M) OUT 101-18 DR-176. 631-11
12V (M) OUT 101-19 DR-176. 631-10
12V (M) OUT 101-20 DR-176. 631-9
12V (M) 1/5
12V (M) 2/5
DC. 902-1 100-11 REG -7V IN
1
2
3
4
5
E
F
G
H
I
J
K
L

IC506 CHANGE INFORMATION
S/N 10001 TO 10030 : SN74HC86ANS <*1>
S/N 10031 AND HIGHER : MC14070BCP <*2>

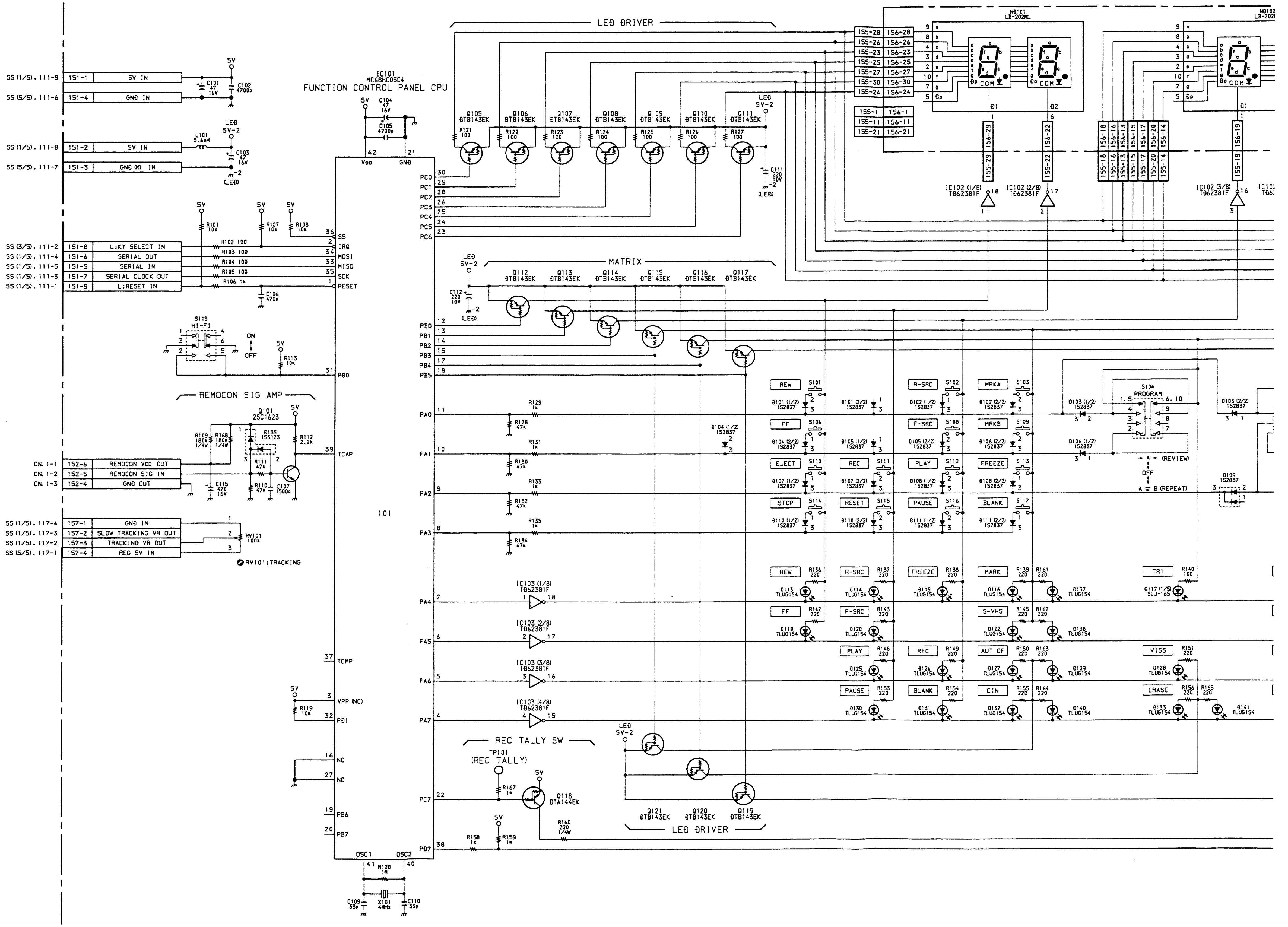
ONLY S/N 10001 TO 10030

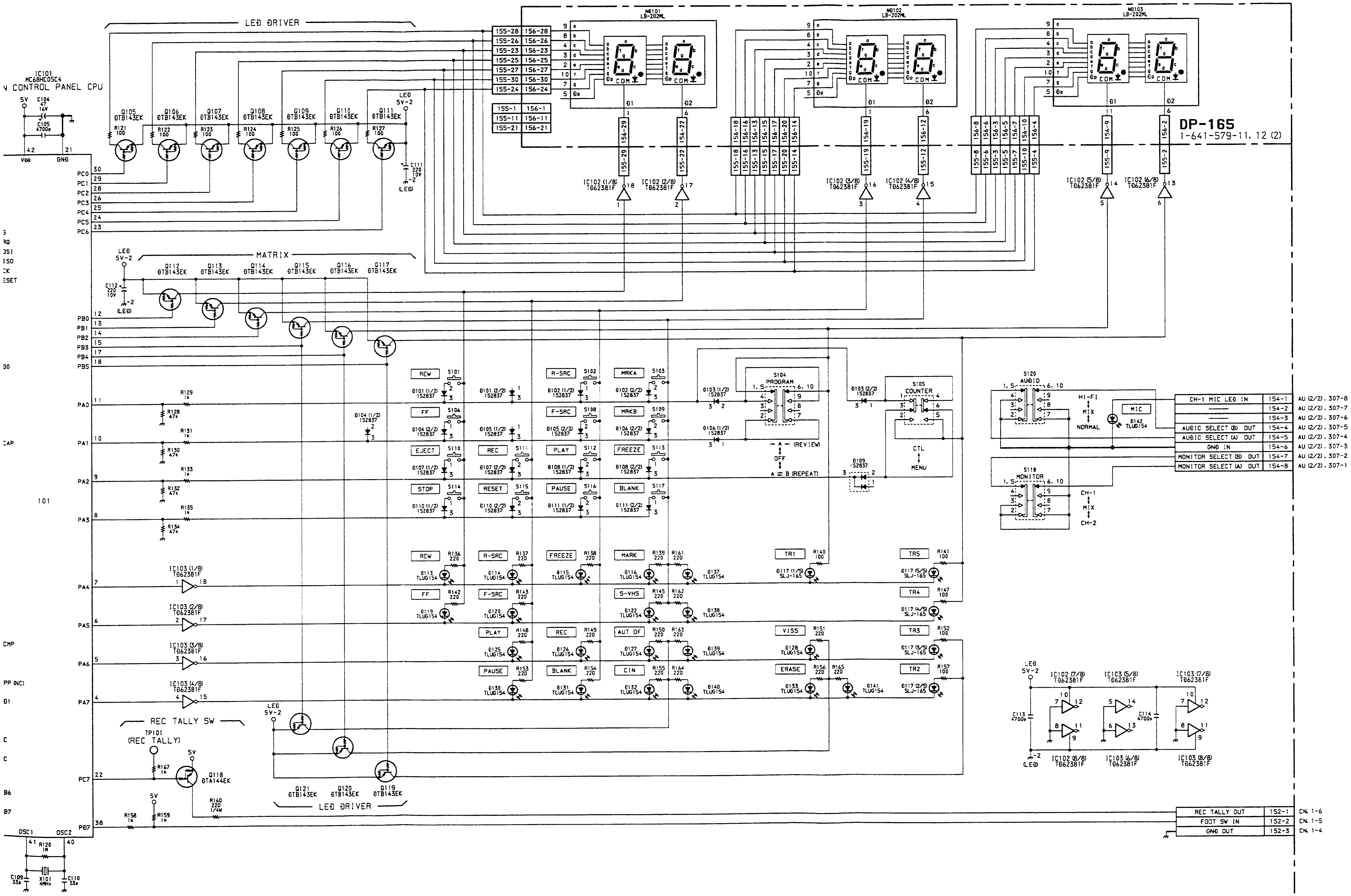
- RS41 IS MOUNTED AT BETWEEN R543 AND IC513 ON LOCATION K-8 (B-SIDE) OF PC BOARD (1-641-575-12). ("R541": OMITTED REF. NO.)
- R536 IS MOUNTED AT "R537" ON LOCATION J-9 (B-SIDE) OF PC BOARD (1-641-575-12). THIS "R537" ON LOCATION J-9 IS A MISPRINT.

SS-49A (5/5)

1-641-575-12, 14, 15 (2)
SVO-9500MDP

KY-219 ; FUNCTION KEY/LED/SWITCH, REMOCON INTERFACE
DP-165 ; COUNTER DISPLAY


1
2
3
4
5
IC101
MC68HC05C4
FUNCTION CONTROL PANEL CPU
LED DRIVER
MATRIX
REMOCON SIG AMP
REC TALLY SW
TP101
(REC TALLY)
LED DRIVER
5V IN
GND IN
GND (D) IN
L:KY SELECT IN
SERIAL OUT
SERIAL IN
SERIAL CLOCK OUT
L:RESET IN
REMOCON Vcc OUT
REMOCON SIG IN
GND OUT
GND IN
SLOW TRACKING VR OUT
TRACKING VR OUT
REG 5V IN
RV101:TRACKING
S119
HI-FI
ON
OFF
Q101
2SC1623
X101
4MHz
ND101
LB-202ML
ND102
LB-202
REW
FF
EJECT
STOP
REC
RESET
R-SRC
F-SRC
PLAY
PAUSE
MARKA
MARKB
FREEZE
BLANK
S104
PROGRAM
(REVIEW)
OFF
A ⇄ B (REPEAT)
MARK
S-VHS
AUT OF
CIN
TR1
VISS
ERASE
Q121
Q120
Q119
DTB143EK
Q118
DTA144EK


LED DRIVER
IC101
MC68HC05C4
CONTROL PANEL CPU
PC0
PC1
PC2
PC3
PC4
PC5
PC6
Q105
Q106
Q107
Q108
Q109
Q110
Q111
DTB143EK
ND101
ND102
ND103
LB-202ML
COM
D1
D2
DP-165
1-641-579-11, 12 (2)
IC102
TD62381F
MATRIX
Q112
Q113
Q114
Q115
Q116
Q117
PB0
PB1
PB2
PB3
PB4
PB5
PA0
PA1
PA2
PA3
PA4
PA5
PA6
PA7
PC7
PD7
REW
FF
EJECT
STOP
REC
RESET
R-SRC
F-SRC
PLAY
PAUSE
MRKA
MRKB
FREEZE
BLANK
S104
PROGRAM
S105
COUNTER
- A - (REVIEW)
OFF
A ⇄ B (REPEAT)
CTL
MENU
S120
AUDIO
HI-FI
MIX
NORMAL
MIC
S118
MONITOR
CH-1
MIX
CH-2
CH-1 MIC LED IN
AUDIO SELECT (B) OUT
AUDIO SELECT (A) OUT
GND IN
MONITOR SELECT (B) OUT
MONITOR SELECT (A) OUT
AU (2/2), 307-8
AU (2/2), 307-7
AU (2/2), 307-6
AU (2/2), 307-5
AU (2/2), 307-4
AU (2/2), 307-3
AU (2/2), 307-2
AU (2/2), 307-1
MARK
S-VHS
AUT DF
CIN
VISS
ERASE
TR1
TR2
TR3
TR4
TR5
TLUG154
SLJ-165
IC103
TD62381F
REC TALLY SW
TP101
(REC TALLY)
Q118
DTA144EK
Q119
Q120
Q121
LED DRIVER
REC TALLY OUT
FOOT SW IN
GND OUT
CN 1-6
CN 1-5
CN 1-4
OSC1
OSC2
X101
4MHz

KY-219

1-641-577-11, 12 (2)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

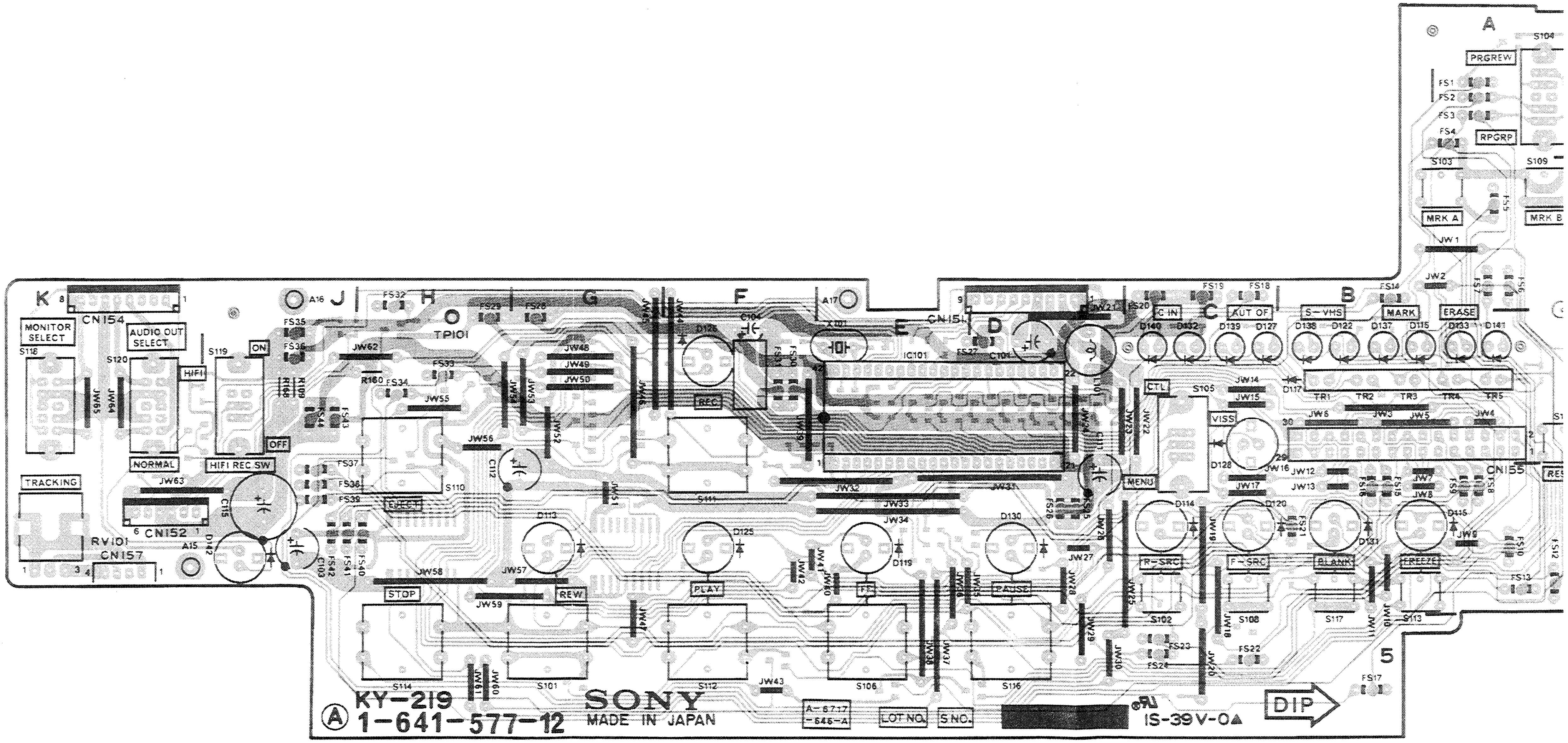
KY-219, DP-165

KY-219 ; FUNCTION KEY/LED/SWITCH, REMOCON INTERFACE
DP-165 ; COUNTER DISPLAY

KY-219 (1-641-577-11, 12)

CN151	E-3
CN152	K-4
CN154	K-2
CN155	A-4
CN157	K-4
D101	G-5 *
D102	C-5 *
D103	D-5 *
D104	E-5 *
D105	C-5 *
D106	A-1 *
D107	H-4 *
D108	F-5 *
D109	D-4 *
D110	E-5 *
D111	D-5 *
D113	G-4
D114	C-4
D115	A-4
D116	B-3
D117	B-3
D119	E-4
D120	C-4
D122	B-3
D125	F-4
D126	F-3
D127	C-3
D128	C-3
D130	D-4
D131	B-4
D132	C-3
D133	A-3
D135	K-3 *
D137	B-3
D138	B-3
D139	C-3
D140	C-3
D141	A-3
D142	J-4
IC101	E-3
IC102	H-4 *
IC103	G-4 *
Q101	K-4 *
Q105	E-3 *
Q106	E-3 *
Q107	D-3 *
Q108	D-3 *
Q109	D-3 *
Q110	D-3 *
Q111	D-3 *
Q112	G-3 *
Q113	G-3 *
Q114	G-3 *
Q115	G-3 *
Q116	G-3 *
Q117	G-3 *
Q118	H-3 *
Q119	H-3 *
Q120	H-3 *
Q121	H-3 *
RV101	K-4
S101	G-5
S102	C-5
S103	A-2
S104	A-1
S105	C-3
S106	E-5
S108	C-5
S109	A-2
S110	H-4
S111	F-4
S112	F-5
S113	B-5
S114	H-5
S115	A-3
S116	D-5
S117	B-5
S118	K-3
S119	J-3
S120	K-3
TP101	H-3
X101	E-3

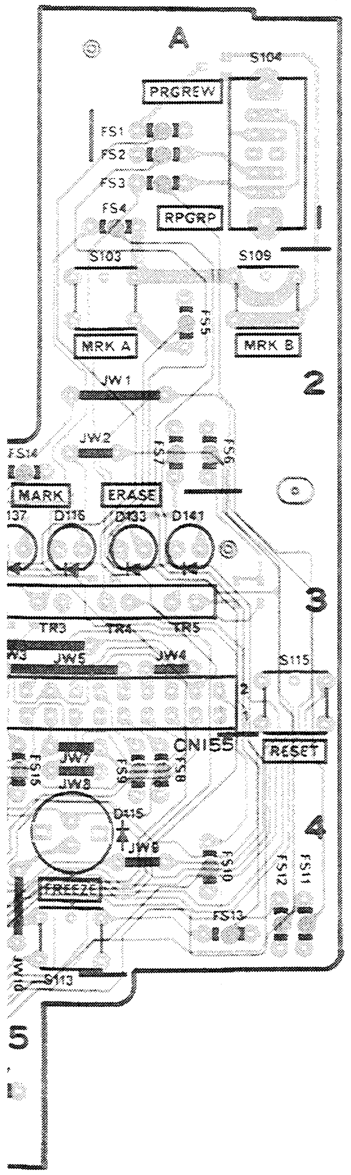
* mark ; B SIDE mount


K
J
H
G
F
E
D
C
B
A
5
CN154
CN152
CN157
CN151
CN155
MONITOR SELECT
AUDIO OUT SELECT
HIFI
ON
OFF
NORMAL
HIFI REC SW
TRACKING
RV101
TP101
IC101
X101
REC
EJECT
STOP
REW
PLAY
FF
PAUSE
FR-SRC
F-SRC
BLANK
FREEZE
MENU
CTL
VISS
C IN
AUT OF
S-VHS
MARK
ERASE
PRGREW
RPGRP
MRK A
KY-219
1-641-577-12
SONY
MADE IN JAPAN
A-6717-646-A
LOT NO.
S NO.
IS-39V-0▲
DIP

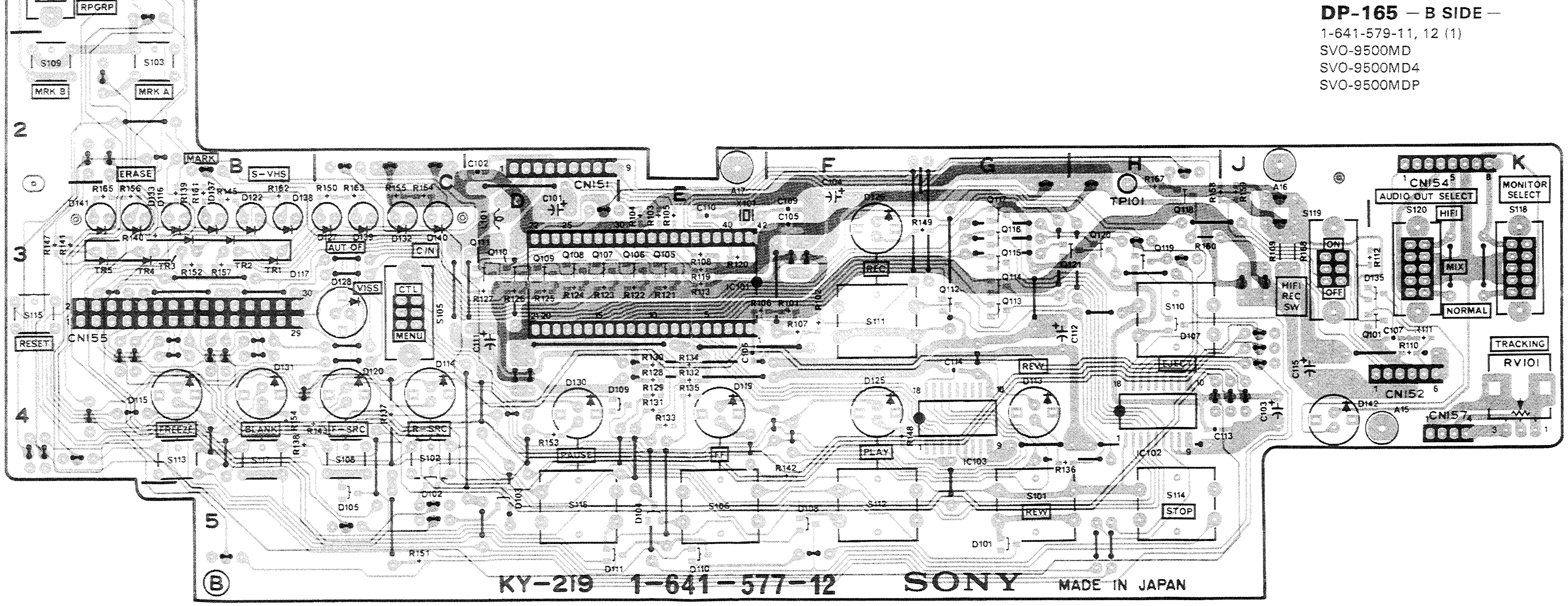
KY-219 — A SID

1-641-577-11, 12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

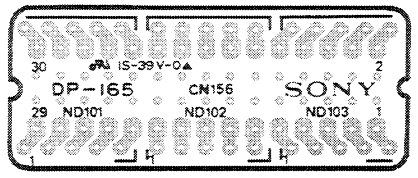
13-49


A
S104
PRGREW
FS1
FS2
FS3
FS4
RPGRP
S103
S109
FS5
MRK A
MRK B
2
JW1
JW2
FS7
FS6
FS14
MARK
ERASE
D115
D133
D141
3
TR3
TR4
TR5
JW3
JW5
JW4
S115
CN155
RESET
JW7
JW8
FS16
FS9
FS8
D415
JW6
FS10
FS12
FS11
4
FREEZE
FS13
S113
5

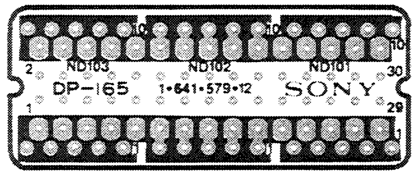
KY-219 — A SIDE —
1-641-577-11, 12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


KY-219 1-641-577-12
SONY
MADE IN JAPAN
B
A
2
3
4
5
B
C
D
E
F
G
H
J
K
S104
D106
PRGREW
RPGRP
S109
S103
MRK B
MRK A
ERASE
MARK
S-VHS
RESET
CN155
AUT OF
C IN
VISS
CTL
MENU
S105
FREEZE
BLANK
F-SRC
R-SRC
PAUSE
FF
PLAY
REW
STOP
REC
EJECT
CN151
IC101
IC102
IC103
TP101
HIFI REC SW
ON
OFF
HIFI
MIX
NORMAL
AUDIO OUT SELECT
MONITOR SELECT
CN154
S120
S118
S119
TRACKING
RV101
CN152
CN157
S110
S111
S106
S112
S116
S101
S114
S102
S108
S107
S113
D101
D110
D111

KY-219 — B SIDE —
1-641-577-11, 12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

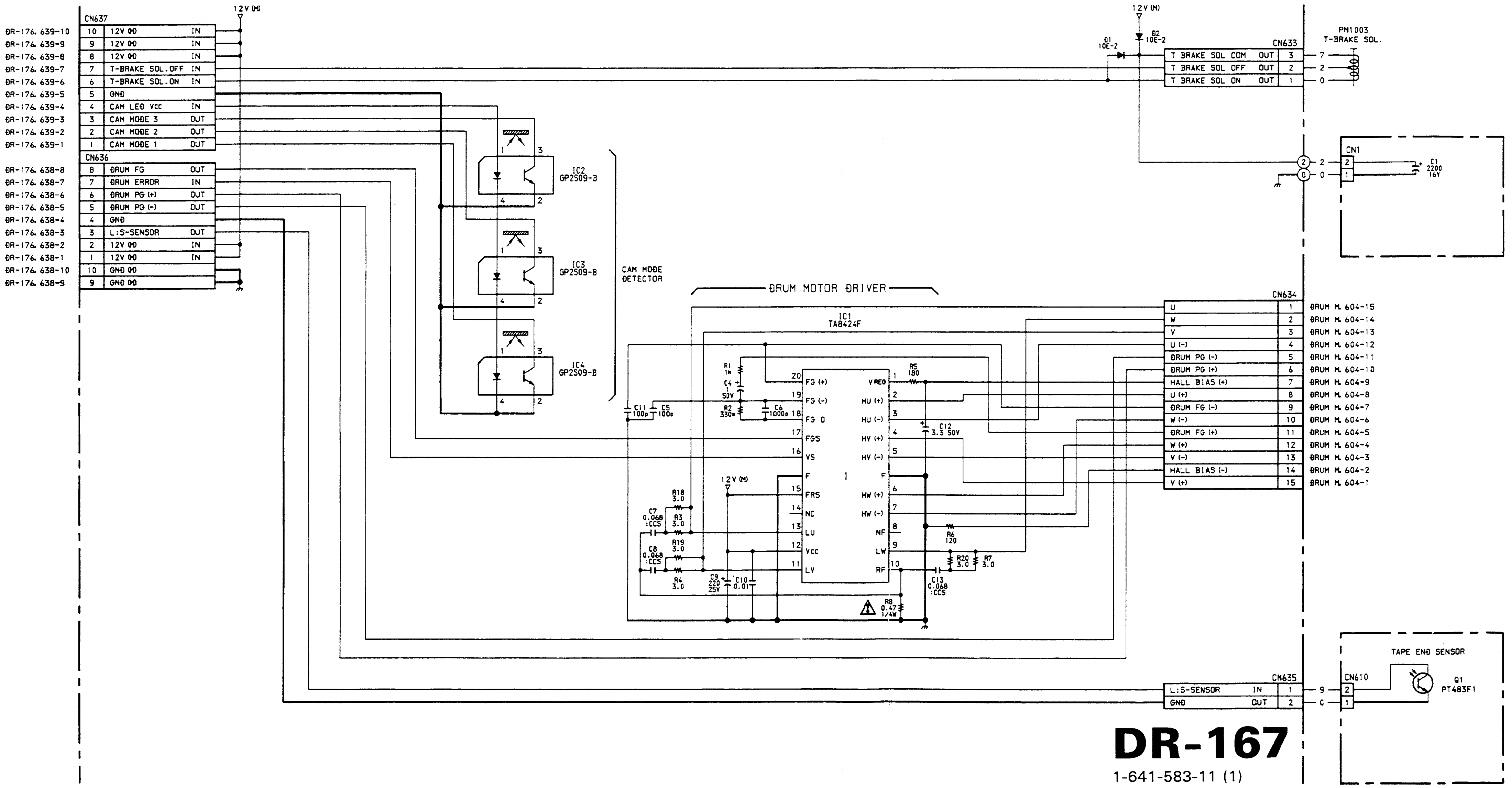

IS-39V-0
DP-165
CN156
SONY
ND101
ND102
ND103
30
2
29
1

DP-165 — A SIDE —
1-641-579-11, 12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


ND103
ND102
ND101
DP-165
1-641-579-12
SONY
2
30
1
29
10

DP-165 — B SIDE —
1-641-579-11, 12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

DR-167 ;	**DRUM MOTOR DRIVER** **CAM MODE DETECTOR**
DUS-544 ;	**CAPACITOR for T-BRAKE SOLENOID**
SE-151/224 ;	**TAPE END SENSOR**


12V (M)
CN637
DR-176. 639-10 | 10 | 12V (M) | IN
DR-176. 639-9 | 9 | 12V (M) | IN
DR-176. 639-8 | 8 | 12V (M) | IN
DR-176. 639-7 | 7 | T-BRAKE SOL.OFF | IN
DR-176. 639-6 | 6 | T-BRAKE SOL.ON | IN
DR-176. 639-5 | 5 | GND
DR-176. 639-4 | 4 | CAM LED Vcc | IN
DR-176. 639-3 | 3 | CAM MODE 3 | OUT
DR-176. 639-2 | 2 | CAM MODE 2 | OUT
DR-176. 639-1 | 1 | CAM MODE 1 | OUT
CN636
DR-176. 638-8 | 8 | DRUM FG | OUT
DR-176. 638-7 | 7 | DRUM ERROR | IN
DR-176. 638-6 | 6 | DRUM PG (+) | OUT
DR-176. 638-5 | 5 | DRUM PG (-) | OUT
DR-176. 638-4 | 4 | GND
DR-176. 638-3 | 3 | L:S-SENSOR | OUT
DR-176. 638-2 | 2 | 12V (M) | IN
DR-176. 638-1 | 1 | 12V (M) | IN
DR-176. 638-10 | 10 | GND (M)
DR-176. 638-9 | 9 | GND (M)
IC2 GP2S09-B
IC3 GP2S09-B
IC4 GP2S09-B
CAM MODE DETECTOR
DRUM MOTOR DRIVER
IC1 TA8424F
20 FG (+)
19 FG (-)
18 FG O
17 FGS
16 VS
F
15 FRS
14 NC
13 LU
12 Vcc
11 LV
1 VREG
2 HU (+)
3 HU (-)
4 HV (+)
5 HV (-)
F
6 HW (+)
7 HW (-)
8 NF
9 LW
10 RF
R1 1k
C4 1 50V
R2 330k
C6 1000p
C11 100p
C5 100p
R5 180
C12 3.3 50V
R18 3.0
C7 0.068 :CCS
R3 3.0
R19 3.0
C8 0.068 :CCS
R4 3.0
C9 220 25V
C10 0.01
R8 0.47 1/4W
R6 120
R20 3.0
R7 3.0
C13 0.068 :CCS
D1 10E-2
D2 10E-2
CN633
T BRAKE SOL COM | OUT | 3 | 7
T BRAKE SOL OFF | OUT | 2 | 2
T BRAKE SOL ON | OUT | 1 | 0
PM1003 T-BRAKE SOL.
CN1
C1 2200 16V
CN634
U | 1 | DRUM M. 604-15
W | 2 | DRUM M. 604-14
V | 3 | DRUM M. 604-13
U (-) | 4 | DRUM M. 604-12
DRUM PG (-) | 5 | DRUM M. 604-11
DRUM PG (+) | 6 | DRUM M. 604-10
HALL BIAS (+) | 7 | DRUM M. 604-9
U (+) | 8 | DRUM M. 604-8
DRUM FG (-) | 9 | DRUM M. 604-7
W (-) | 10 | DRUM M. 604-6
DRUM FG (+) | 11 | DRUM M. 604-5
W (+) | 12 | DRUM M. 604-4
V (-) | 13 | DRUM M. 604-3
HALL BIAS (-) | 14 | DRUM M. 604-2
V (+) | 15 | DRUM M. 604-1
CN635
L:S-SENSOR | IN | 1 | 9
GND | OUT | 2 | 0
CN610
TAPE END SENSOR
Q1 PT483F1

DUS-544
1-644-095-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

DR-167
1-641-583-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

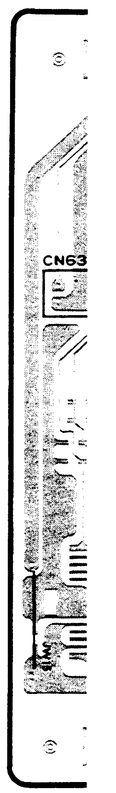
S/N 10001 to 12290 (EK)

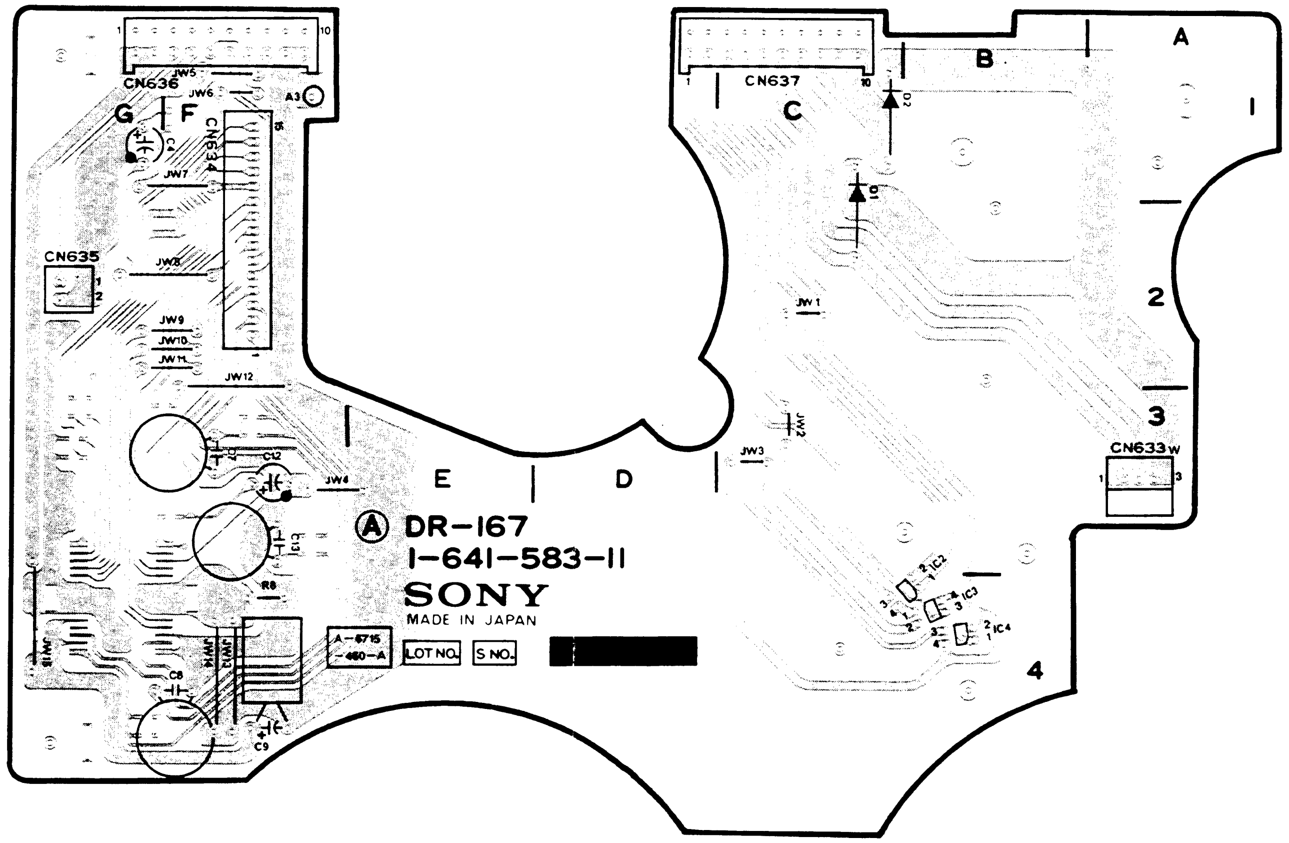
SE-151
1-637-245-13 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

S/N 12291 and higher (EK)

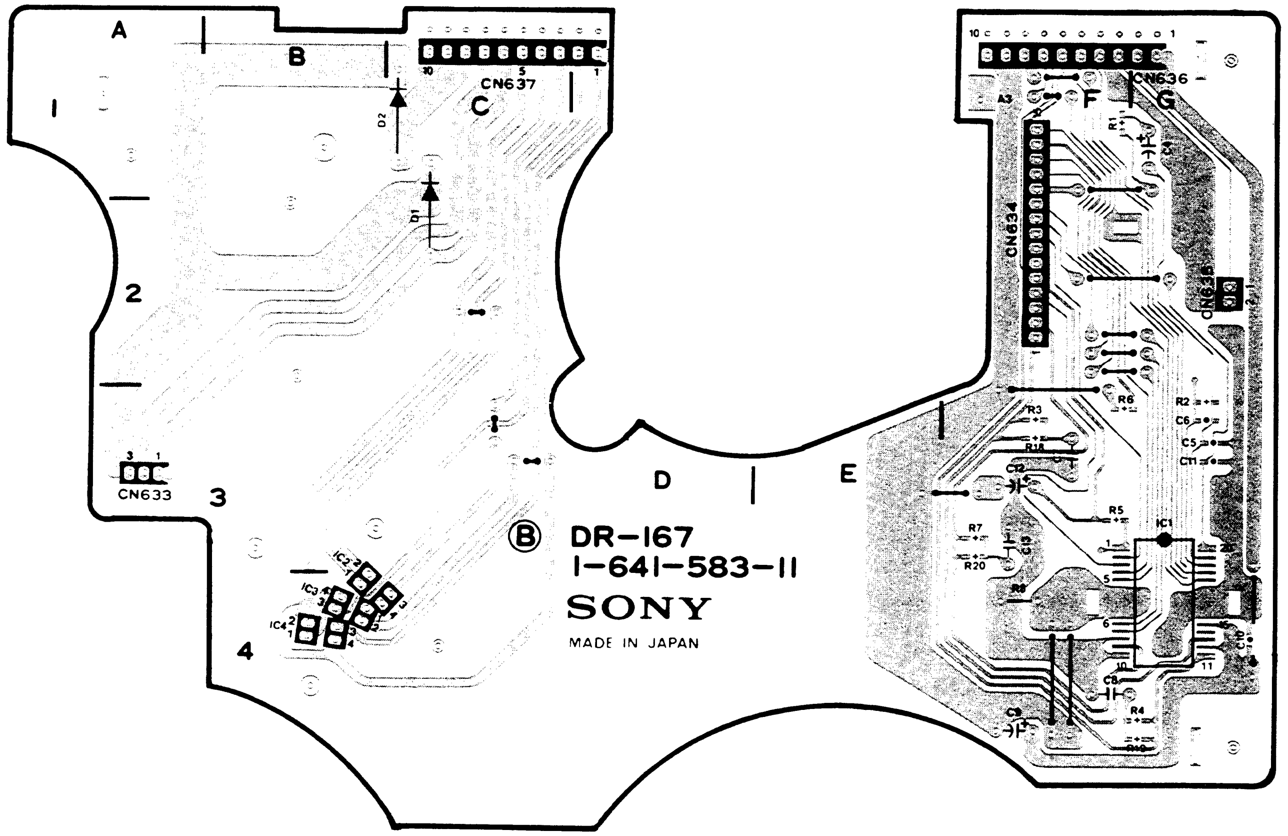
SE-224
1-650-153-11 (1)
SVO-9500MDP

NOTE :
The ⚠-marked components are critical to safety.
Replace only with same components as specified.

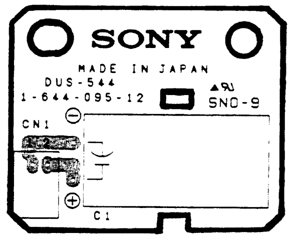



CN636
CN637
CN634
CN635
CN633
A
B
C
D
E
F
G
1
2
3
4
Ⓐ DR-167
1-641-583-11
SONY
MADE IN JAPAN
LOT NO.
S NO.
[redacted]

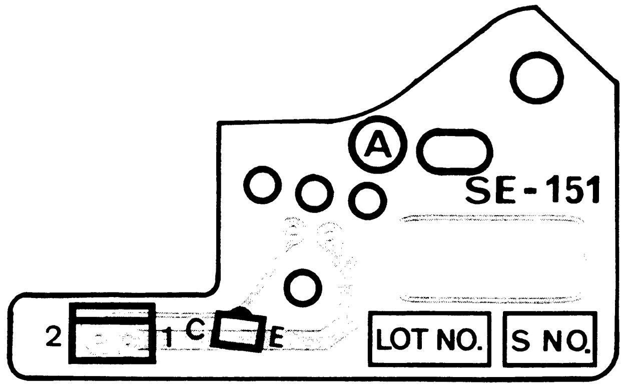
DR-167 – A SIDE –
1-641-583-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


CN636
CN637
CN634
CN633
A
B
C
D
E
F
G
1
2
3
4
Ⓑ DR-167
1-641-583-11
SONY
MADE IN JAPAN

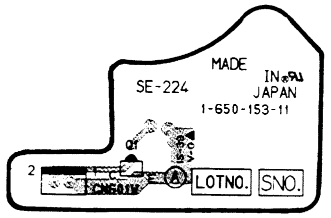
DR-167 – B SIDE –
1-641-583-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


SONY
MADE IN JAPAN
DUS-544
1-644-095-12
SNC-9
CN1
C1

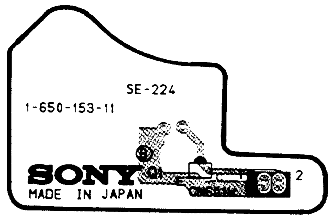
DUS-544 – A SIDE –
1-644-095-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


Ⓐ
SE-151
2
1
C
E
LOT NO.
S NO.

SE-151 – A SIDE –
1-637-245-13 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP
S/N 10001 to 12290 (EK)


SE-224
MADE IN JAPAN
1-650-153-11
2
LOT NO.
S NO.

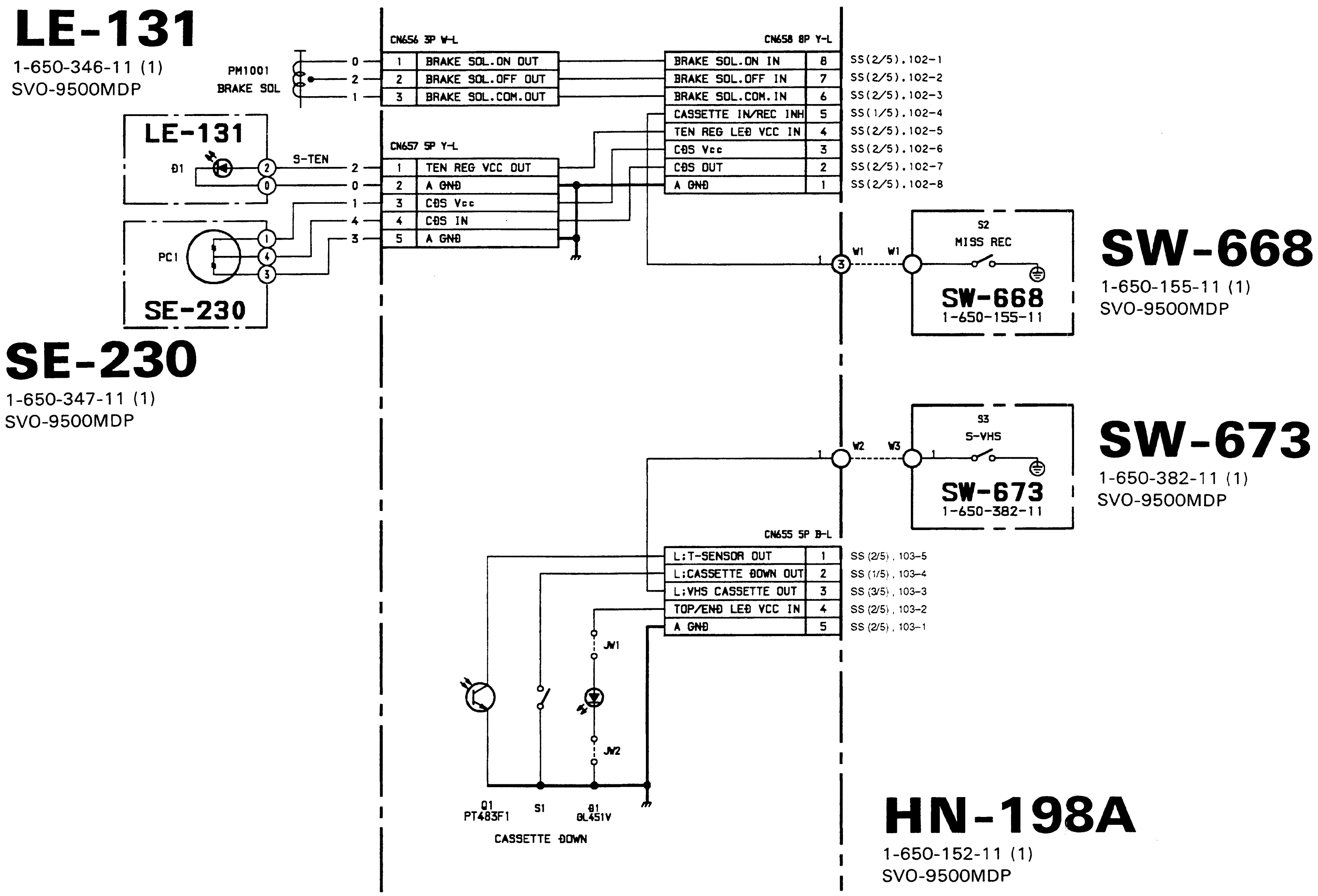
SE-224 – A SIDE –
1-650-153-11 (1)
SVO-9500MDP
S/N 12291 and higher (EK)

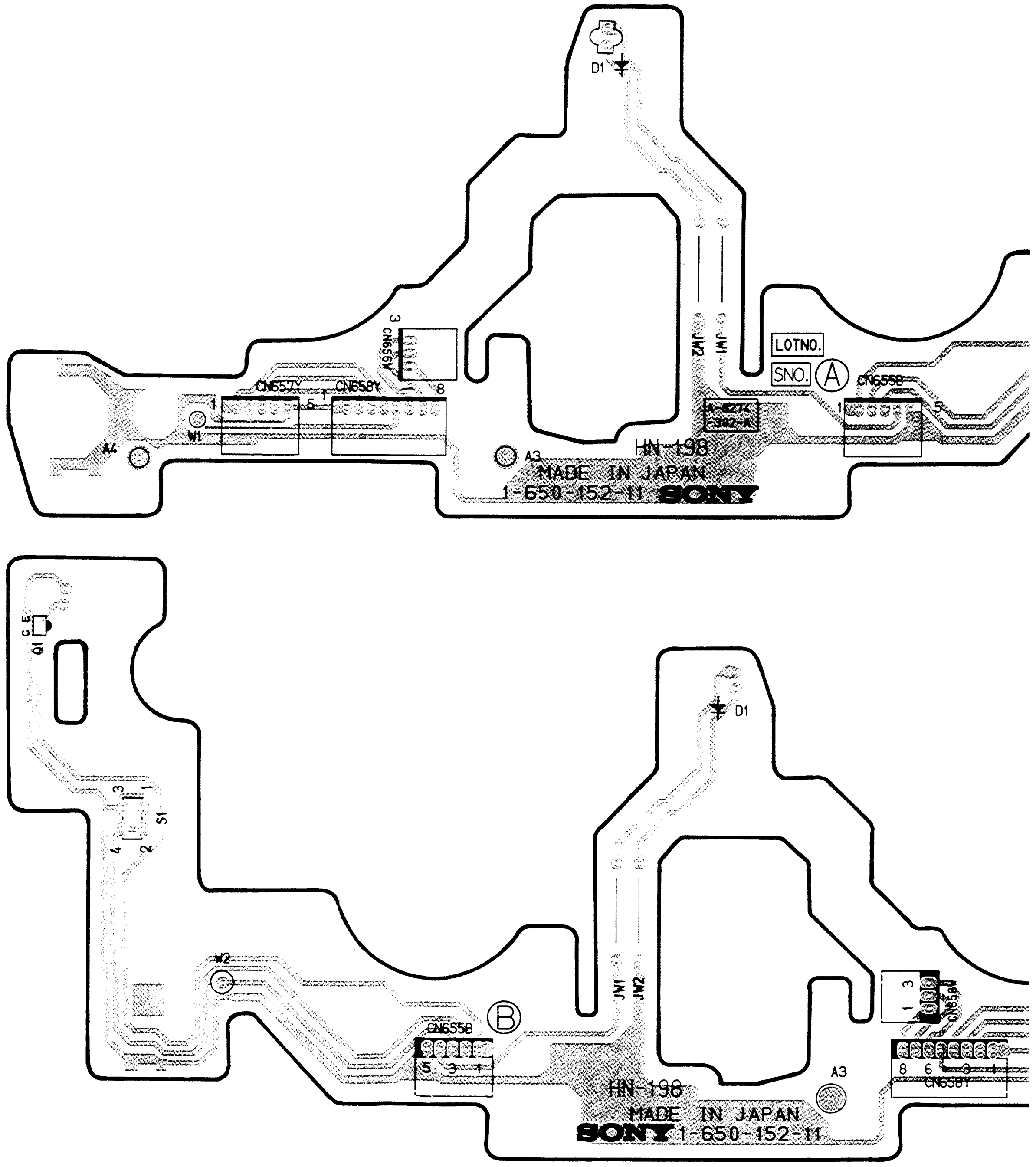

SE-224
1-650-153-11
SONY
MADE IN JAPAN
2

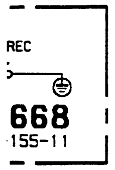
SE-224 – B SIDE –
1-650-153-11 (1)
SVO-9500MDP
S/N 12291 and higher (EK)

S/N 12291 and higher (EK)

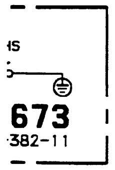
HN-198A ;	CONNECTION
LE-131 ;	TENSION REGULATOR LED
SE-230 ;	TENSION REGULATOR CDS DETECT
SW-668 ;	MISS REC SW
SW-673 ;	S-VHS CASSETTE SW


LE-131
1-650-346-11 (1)
SVO-9500MDP
PM1001
BRAKE SOL
LE-131
D1
S-TEN
PC1
SE-230
SE-230
1-650-347-11 (1)
SVO-9500MDP
CN656 3P W-L
1 BRAKE SOL.ON OUT
2 BRAKE SOL.OFF OUT
3 BRAKE SOL.COM.OUT
CN657 5P Y-L
1 TEN REG VCC OUT
2 A GND
3 CDS Vcc
4 CDS IN
5 A GND
CN658 8P Y-L
BRAKE SOL.ON IN 8 SS(2/5).102-1
BRAKE SOL.OFF IN 7 SS(2/5).102-2
BRAKE SOL.COM.IN 6 SS(2/5).102-3
CASSETTE IN/REC INH 5 SS(1/5).102-4
TEN REG LED VCC IN 4 SS(2/5).102-5
CDS Vcc 3 SS(2/5).102-6
CDS OUT 2 SS(2/5).102-7
A GND 1 SS(2/5).102-8
W1
W1
S2
MISS REC
SW-668
1-650-155-11
SW-668
1-650-155-11 (1)
SVO-9500MDP
W2
W3
S3
S-VHS
SW-673
1-650-382-11
SW-673
1-650-382-11 (1)
SVO-9500MDP
CN655 5P B-L
L:T-SENSOR OUT 1 SS (2/5) , 103-5
L:CASSETTE DOWN OUT 2 SS (1/5) , 103-4
L:VHS CASSETTE OUT 3 SS (3/5) , 103-3
TOP/END LED VCC IN 4 SS (2/5) , 103-2
A GND 5 SS (2/5) , 103-1
JW1
JW2
Q1
PT483F1
S1
D1
GL451V
CASSETTE DOWN
HN-198A
1-650-152-11 (1)
SVO-9500MDP


D1
CN659Y
CN657Y
CN658Y
W1
A4
A3
JW2
JW1
LOTNO.
SNO.
A
CN656
HN-198
MADE IN JAPAN
1-650-152-11
SONY
Q1
D1
S1
W2
B
CN655B
A3
CN658Y
HN-198
MADE IN JAPAN
SONY 1-650-152-11

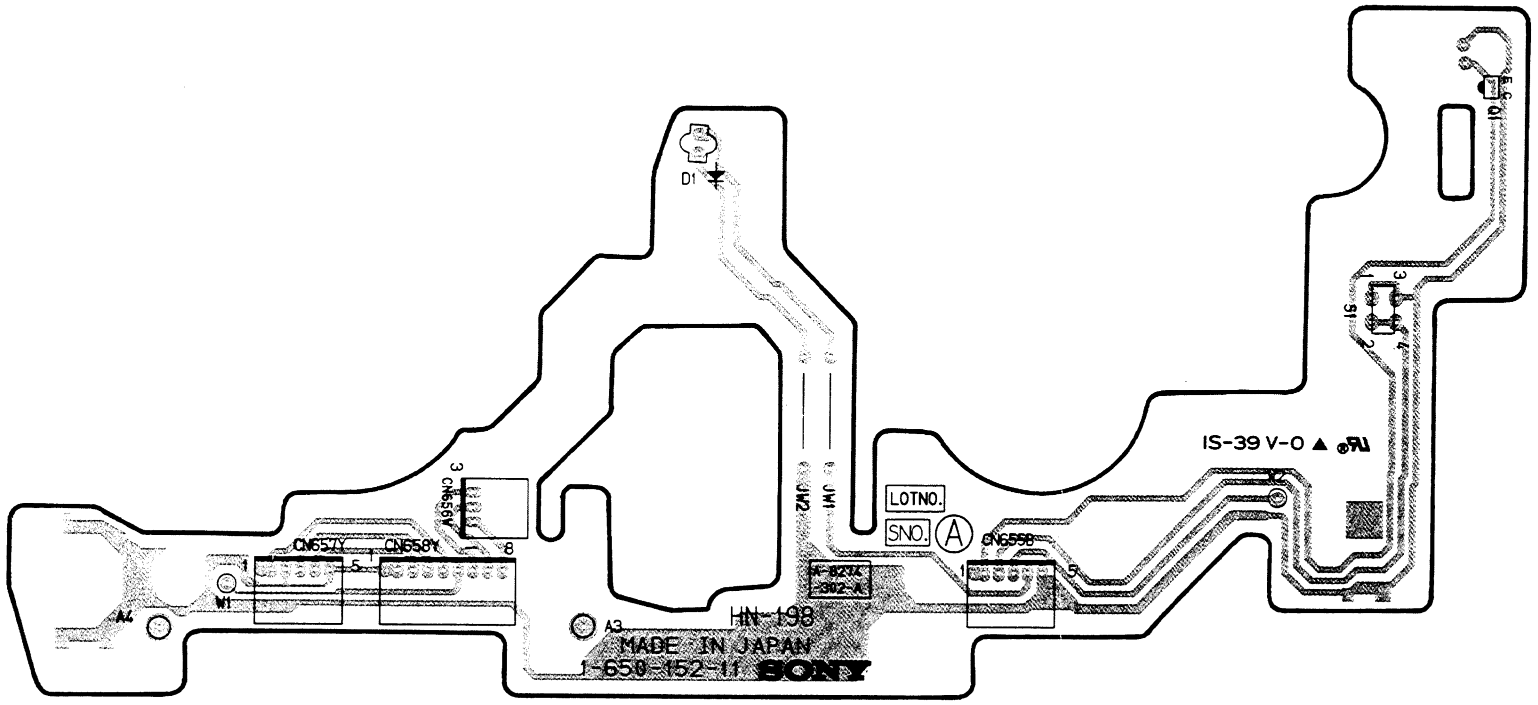

REC
668
155-11

SW-668
1-650-155-11 (1)
SVO-9500MDP

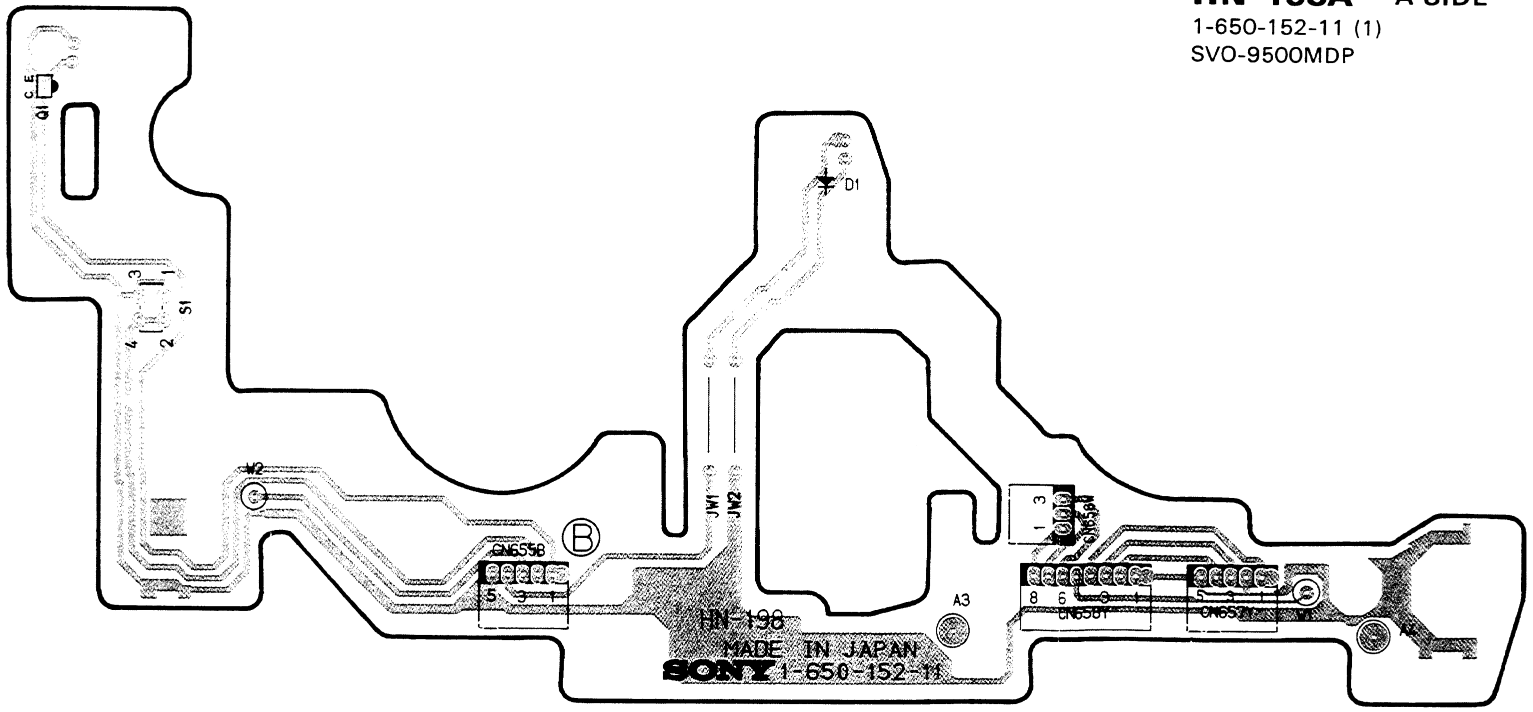


SW-673
1-650-382-11 (1)
SVO-9500MDP

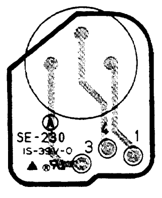
·198A
1 (1)
DP


D1
S1
IS-39 V-0
LOTNO.
SNO.
Ⓐ
CN656Y
CN657Y
CN658Y
CN655B
JW1
JW2
W1
A3
A4
HN-198
MADE IN JAPAN
1-650-152-11
SONY

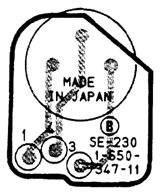
HN-198A – A SIDE –
1-650-152-11 (1)
SVO-9500MDP


Q1
D1
S1
W2
Ⓑ
CN655B
CN656Y
CN658Y
CN657Y
JW1
JW2
A3
HN-198
MADE IN JAPAN
SONY 1-650-152-11

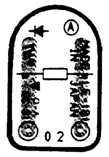
HN-198A – B SIDE –
1-650-152-11 (1)
SVO-9500MDP


SE-230
IS-39V-0

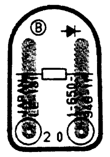
SE-230 – A SIDE –
1-650-347-11 (1)
SVO-9500MDP


MADE IN JAPAN
SE-230
1-650-347-11

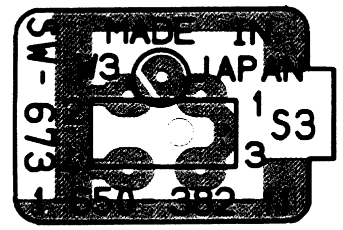
SE-230 – B SIDE –
1-650-347-11 (1)
SVO-9500MDP



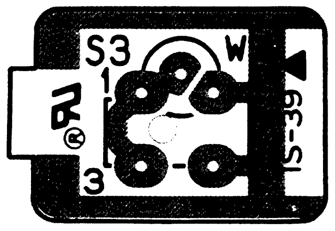
LE-131 – A SIDE –
1-650-346-11 (1)
SVO-9500MDP



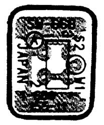
LE-131 – B SIDE –
1-650-346-11 (1)
SVO-9500MDP


MADE IN JAPAN
S3
SW-673
1-650-382

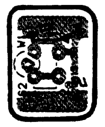
SW-673 – A SIDE –
1-650-382-11 (1)
SVO-9500MDP



SW-673 – B SIDE –
1-650-382-11 (1)
SVO-9500MDP

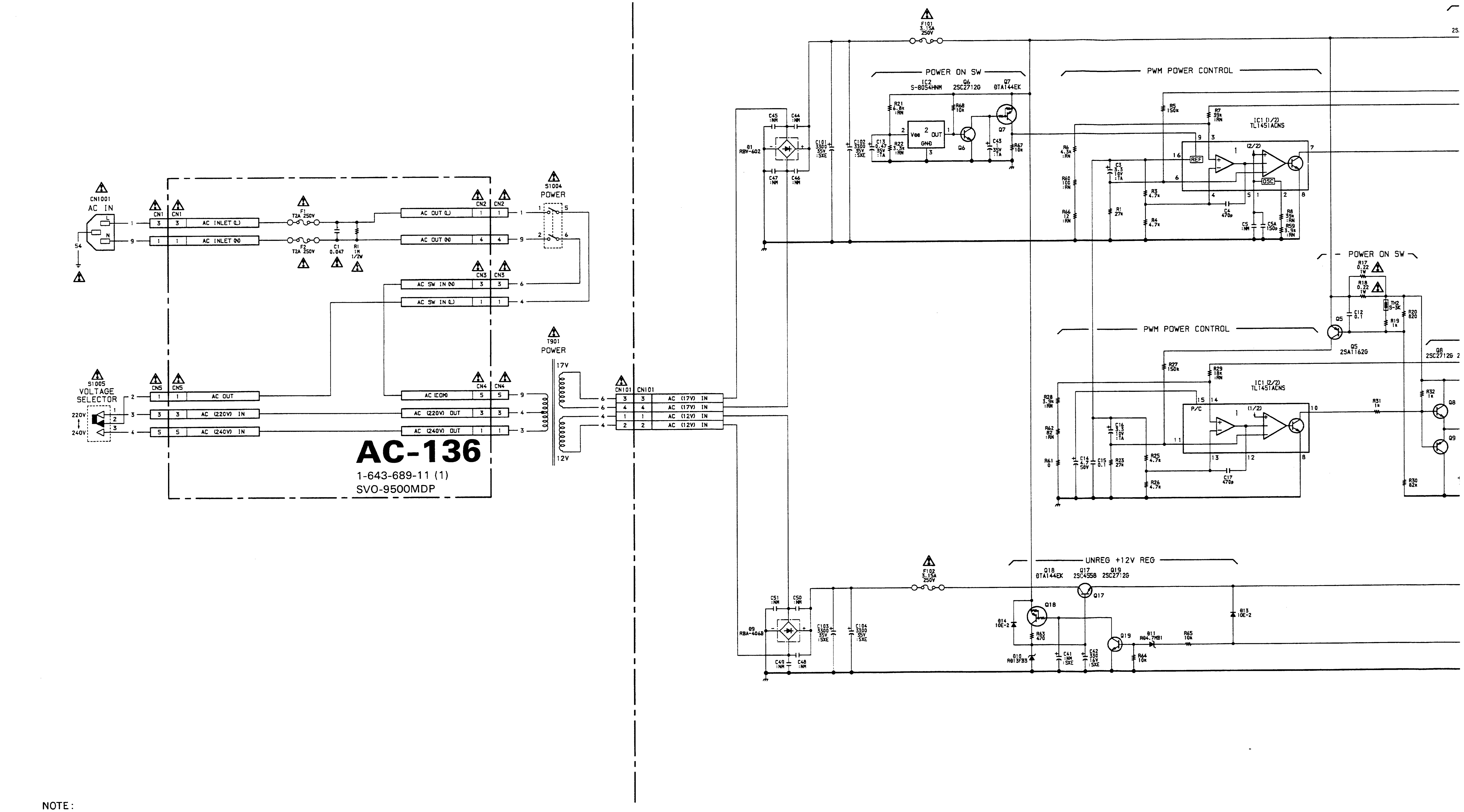


SW-668 – A SIDE –
1-650-155-11 (1)
SVO-9500MDP



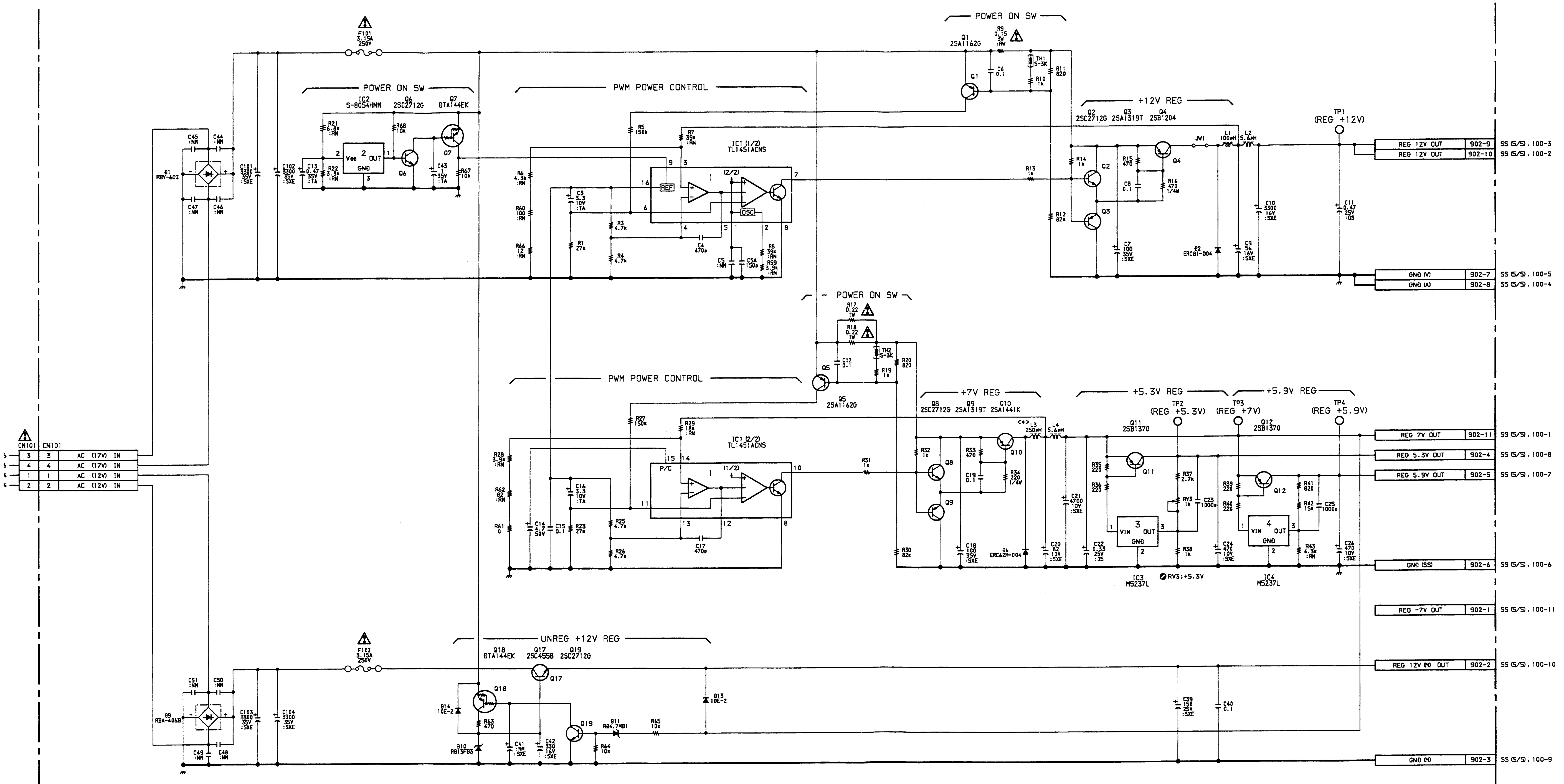
SW-668 – B SIDE –
1-650-155-11 (1)
SVO-9500MDP

AC-136 ; AC INPUT
DC-53A ; AC-DC POWER REGULATOR


CN1001
AC IN
S4
CN1
AC INLET (L)
AC INLET (N)
F1 T2A 250V
F2 T2A 250V
C1 0.047
R1 1M 1/2W
AC OUT (L)
AC OUT (N)
CN2
S1004 POWER
AC SW IN (N)
AC SW IN (L)
CN3
S1005 VOLTAGE SELECTOR
220V
240V
CN5
AC OUT
AC (220V) IN
AC (240V) IN
AC (COM)
AC (220V) OUT
AC (240V) OUT
CN4
T901 POWER
17V
12V
AC-136
1-643-689-11 (1)
SVO-9500MDP
CN101
AC (17V) IN
AC (12V) IN
D1 RBV-602
F101 3.15A 250V
C101 3300 35V :SXE
C102 3300 35V :SXE
POWER ON SW
IC2 S-8054HNM
Q6 2SC2712G
Q7 DTA144EK
PWM POWER CONTROL
IC1 (1/2) TL1451ACNS
IC1 (2/2) TL1451ACNS
REF
OSC
P/C
POWER ON SW
R17 0.22 1W
R18 0.22 1W
Q5 2SA1162G
Q8 2SC2712G
UNREG +12V REG
Q18 DTA144EK
Q17 2SC4558
Q19 2SC2712G
F102 3.15A 250V
D9 RBA-406B
C103 3300 35V :SXE
C104 3300 35V :SXE

NOTE:
The ⚠-marked components are critical to safety.
Replace only with same components as specified.

A | B | C | D | E | F | G | H |


POWER ON SW
PWM POWER CONTROL
+12V REG
+7V REG
+5.3V REG
+5.9V REG
UNREG +12V REG
F101 3.15A 250V
F102 3.15A 250V
IC2 S-8054HNM
Q6 2SC2712G
Q7 DTA144EK
IC1 (1/2) TL1451ACNS
IC1 (2/2) TL1451ACNS
REF
OSC
P/C
Q1 2SA1162G
Q2 2SC2712G
Q3 2SA1319T
Q4 2SB1204
Q5 2SA1162G
Q8 2SC2712G
Q9 2SA1319T
Q10 2SA1441K
Q11 2SB1370
Q12 2SB1370
Q18 DTA144EK
Q17 2SC4558
Q19 2SC2712G
IC3 M5237L
IC4 M5237L
ØRV3:+5.3V
TP1 (REG +12V)
TP2 (REG +5.3V)
TP3 (REG +7V)
TP4 (REG +5.9V)
D1 RBV-602
D9 RBA-406B
CN101
AC (17V) IN
AC (17V) IN
AC (12V) IN
AC (12V) IN
REG 12V OUT 902-9 SS (S/D). 100-3
REG 12V OUT 902-10 SS (S/D). 100-2
GND (V) 902-7 SS (S/D). 100-5
GND (A) 902-8 SS (S/D). 100-4
REG 7V OUT 902-11 SS (S/D). 100-1
REG 5.3V OUT 902-4 SS (S/D). 100-8
REG 5.9V OUT 902-5 SS (S/D). 100-7
GND (SS) 902-6 SS (S/D). 100-6
REG -7V OUT 902-1 SS (S/D). 100-11
REG 12V (M) OUT 902-2 SS (S/D). 100-10
GND (M) 902-3 SS (S/D). 100-9
1
2
3
4
5

NOTE:<*>:CHANGED PARTS LIST

ADDRESS	CHANGE INFORMATION	SERIAL No.
	CHANGED	
1-3	L3 180uH ⟶ 250uH	12621 -

DC-53A

1-641-580-21 (2)
SVO-9500MDP

CN-633 ; CONNECTION of FRONT CONNECTOR

CP-183 ; CONNECTION of REAR CONNECTOR S/N 10001 to 13550 (EK)

DUS-442 ; INDICATE CONNECTOR S/N 10001 to 13550 (EK)

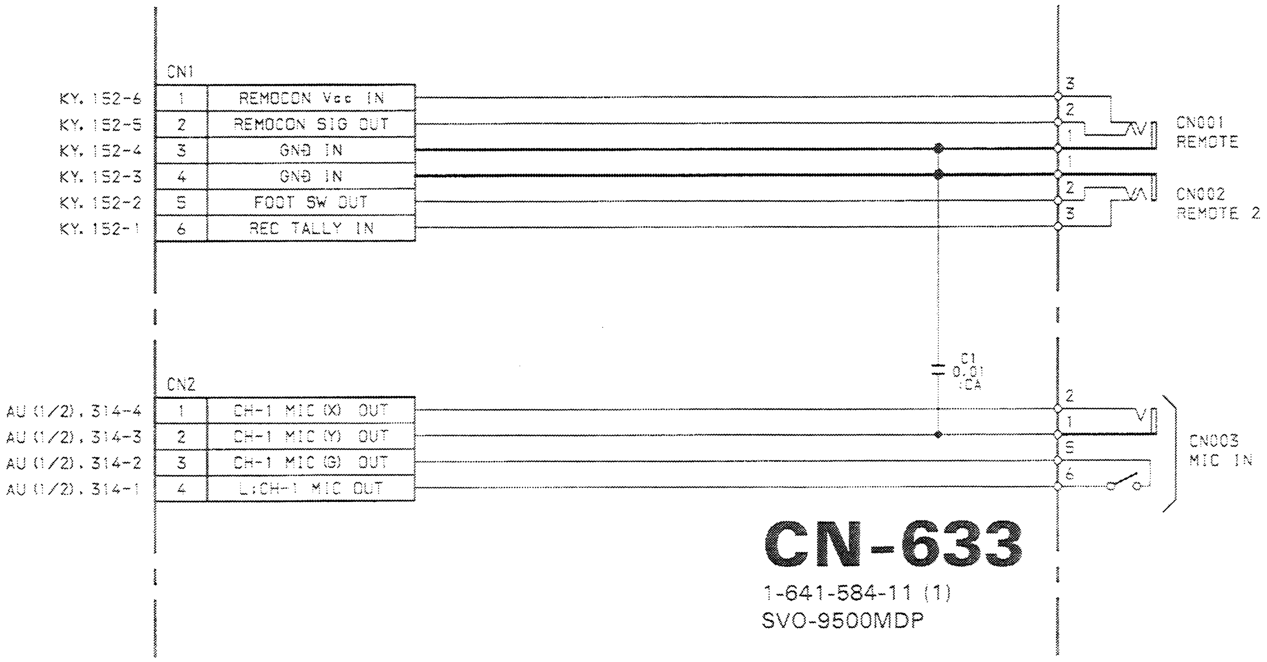
1

2

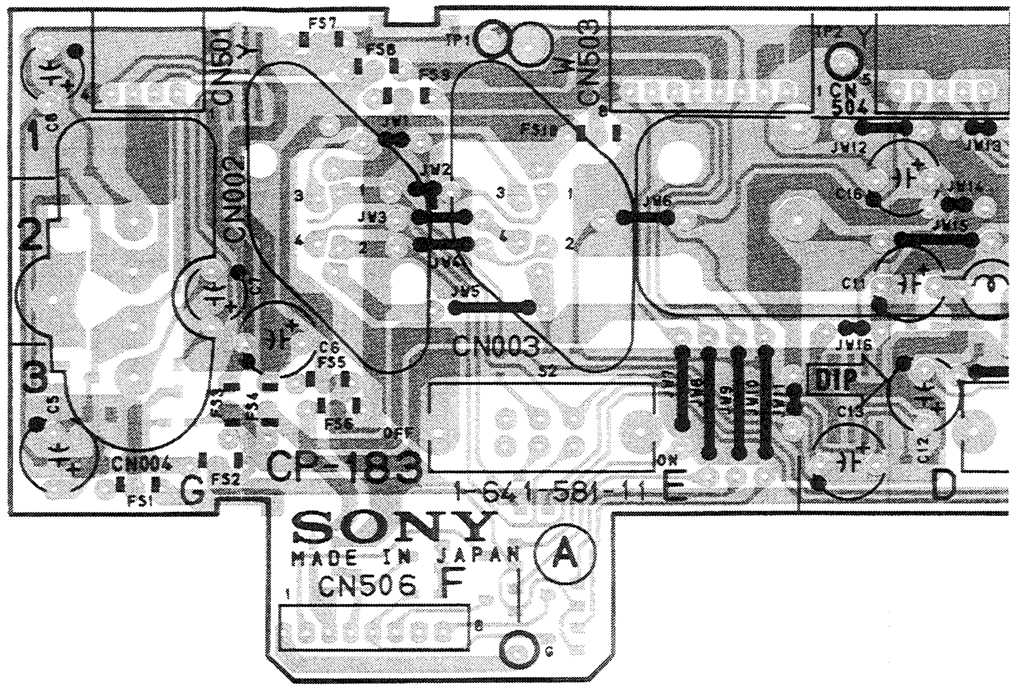
3

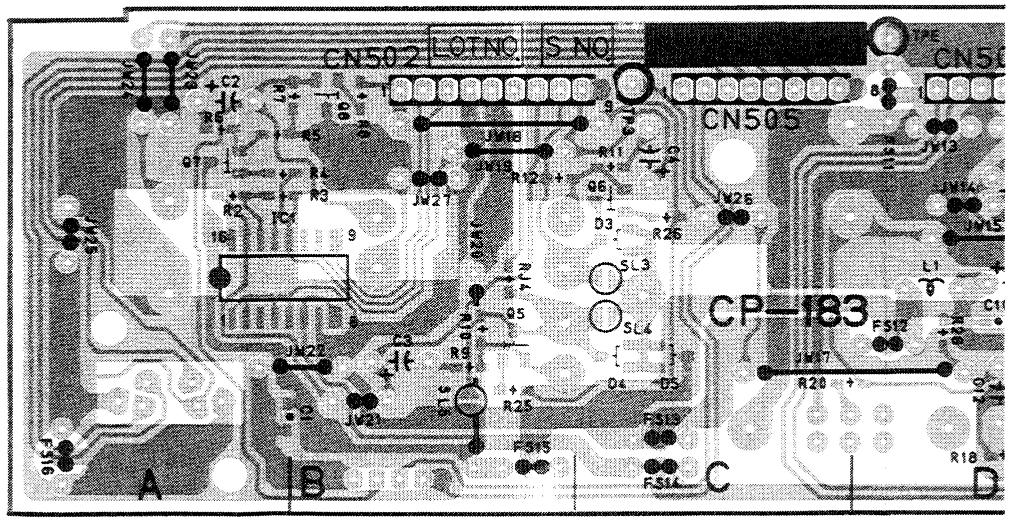
4

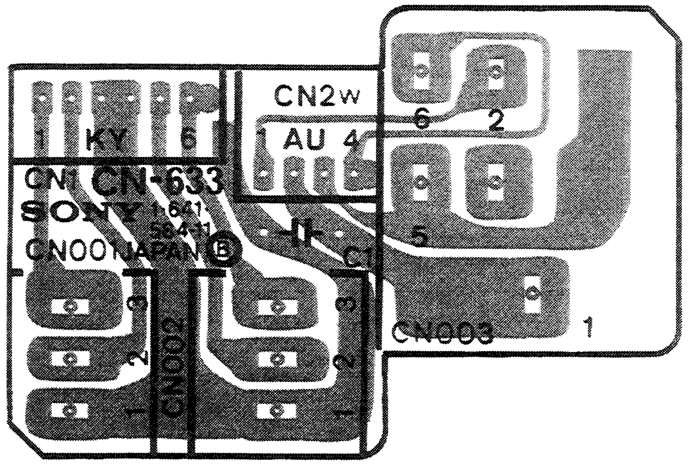
5


CN1
KY. 152-6 1 REMOCON Vcc IN
KY. 152-5 2 REMOCON SIG OUT
KY. 152-4 3 GND IN
KY. 152-3 4 GND IN
KY. 152-2 5 FOOT SW OUT
KY. 152-1 6 REC TALLY IN
CN001
REMOTE
CN002
REMOTE 2
C1
0.01
CA
CN2
AU (1/2), 314-4 1 CH-1 MIC (X) OUT
AU (1/2), 314-3 2 CH-1 MIC (Y) OUT
AU (1/2), 314-2 3 CH-1 MIC (G) OUT
AU (1/2), 314-1 4 L:CH-1 MIC OUT
CN003
MIC IN

CN-633
1-641-584-11 (1)
SVO-9500MDP


CN501
CN503
CN504
CN002
CN003
CN004
CP-183
1-641-581-11
SONY
MADE IN JAPAN
A
CN506
DIP
G
E
D
F


CN502
LOT NO
S NO
CN505
CP-183
IC1
A
B
C
D


CN2w
AU 4
1 KY 6
CN1 CN-633
SONY 1-641-584-11
CN001 JAPAN B
C1
CN002
CN003
1
2
3
5
6

CN-633 — B SIDE —
1-641-584-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

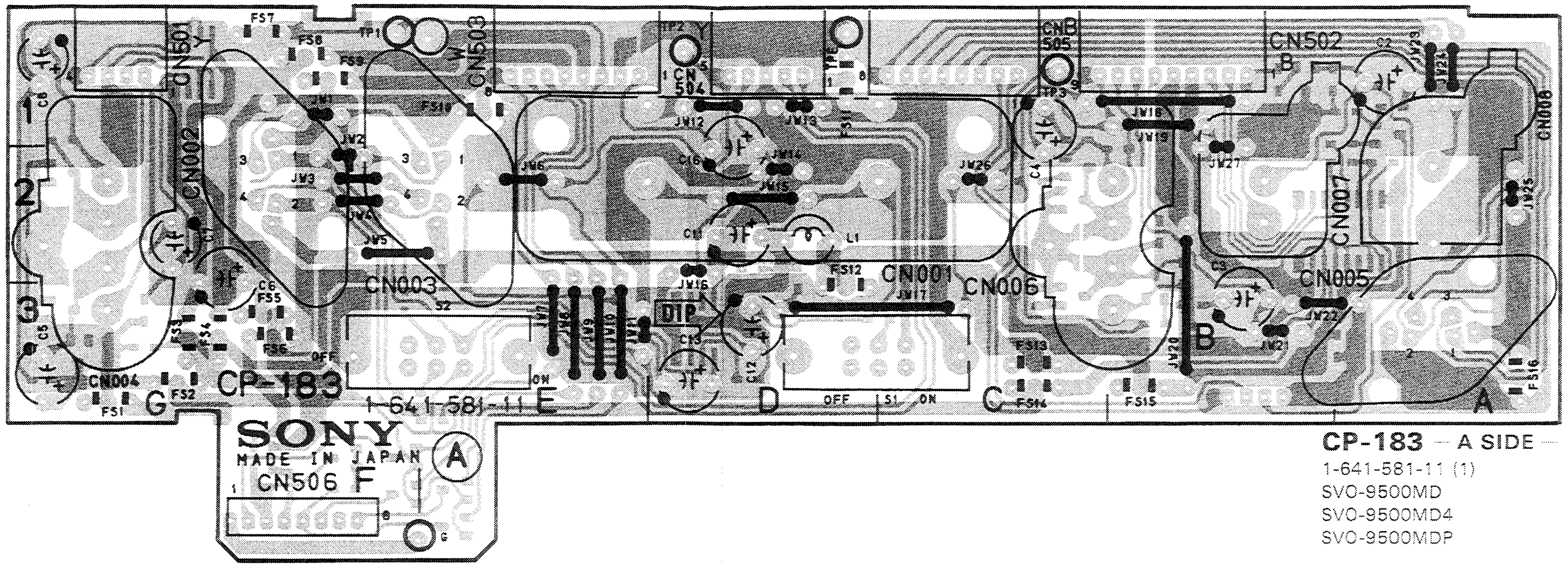
A B C D E F G H

CN-633, CP-183, DUS-442

CN001
REMOTE

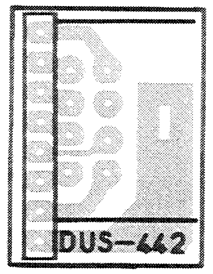
CN002
REMOTE 2

CN003
MIC IN


CN501
CN503
CN504
CN505
CN502
CN008
CN002
CN007
CN003
CN001
CN006
CN005
CN004
CP-183
1-641-581-11
SONY
MADE IN JAPAN
CN506
A
B
C
D
E
F
G
1
2
3
DIP
OFF
ON
S1

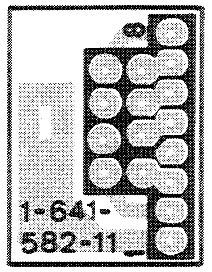
CP-183 — A SIDE

1-641-581-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP



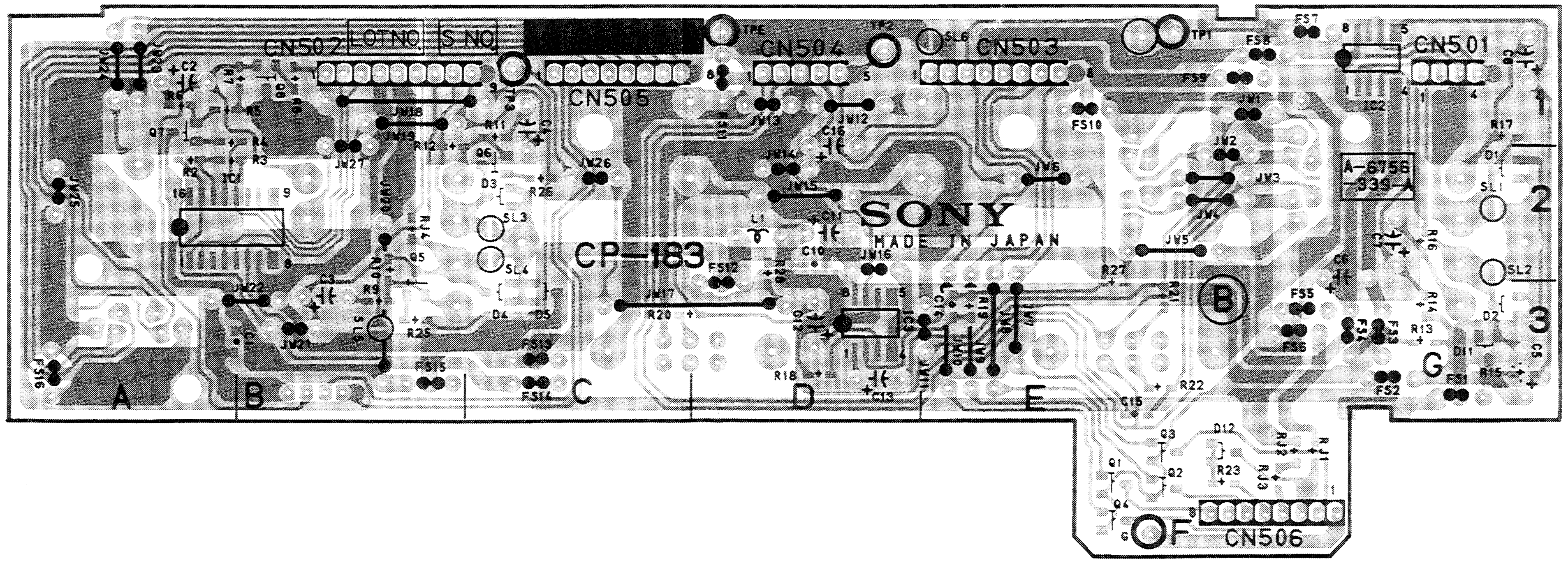
DUS-442 — A SIDE

1-641-582-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


8
1-641-
582-11

DUS-442 — B SIDE

1-641-582-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


CN502
LOT NO.
S NO.
CN505
CN504
CN503
CN501
A-6756
-339-A
SONY
MADE IN JAPAN
CP-183
CN506
A
B
C
D
E
F
G
1
2
3

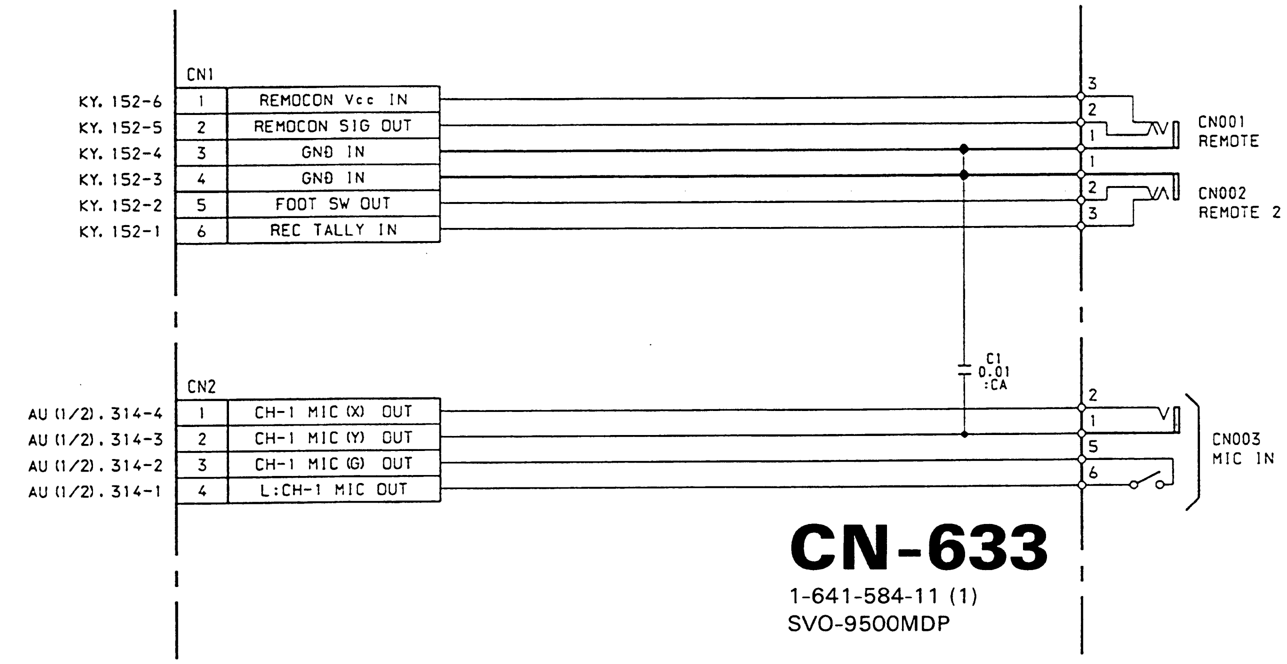
CP-183 — B SIDE

1-641-581-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

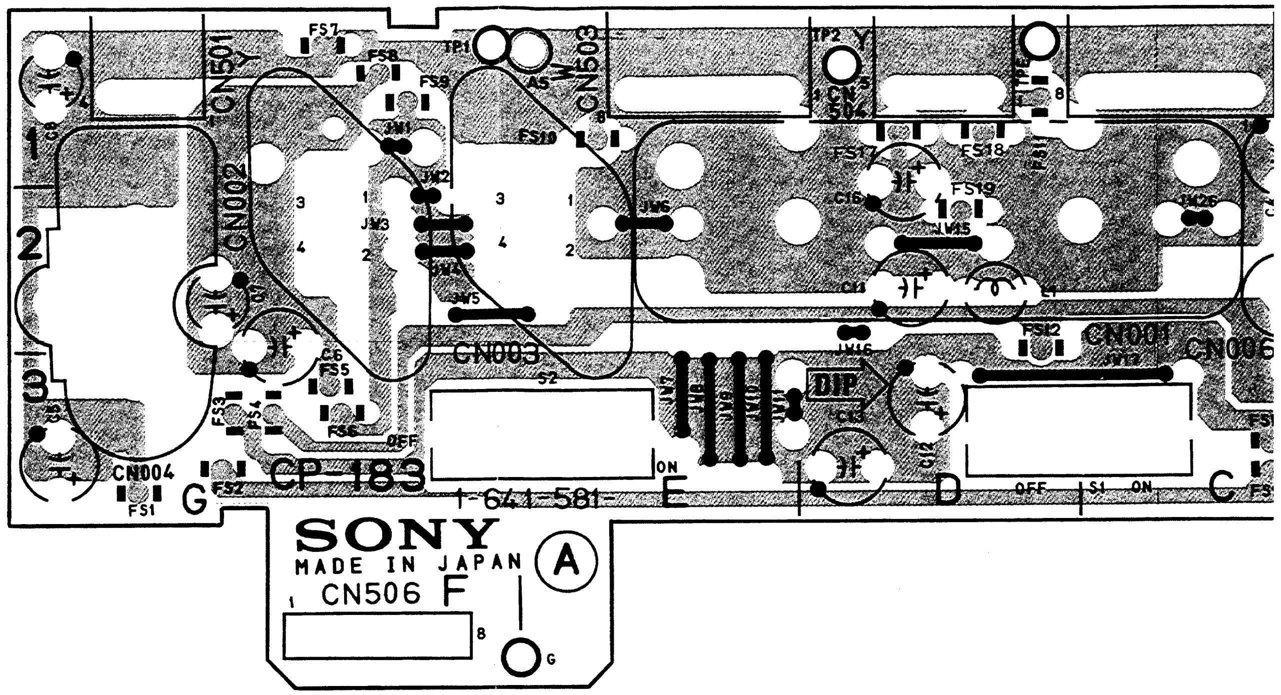
CN-633 ; CONNECTION of FRONT CONNECTOR

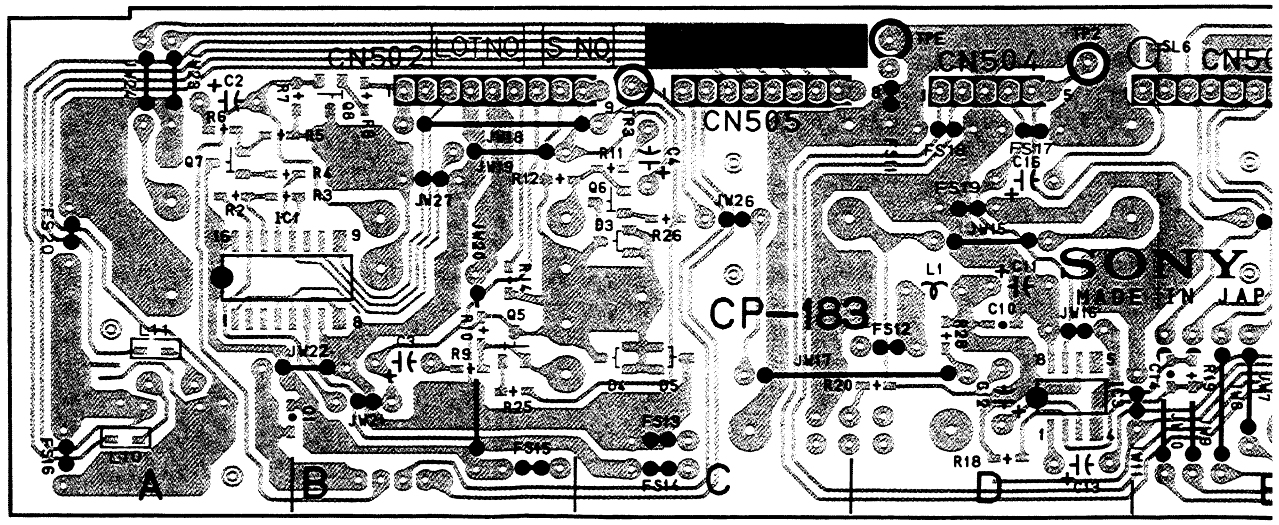
CP-183 ; CONNECTION of REAR CONNECTOR S/N 13551 and higher (EK)

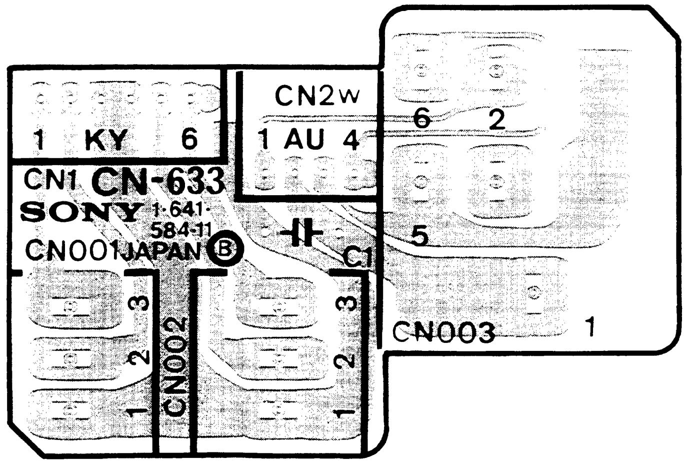
DUS-442 ; INDICATE CONNECTOR S/N 13551 and higher (EK)


CN1
KY. 152-6
KY. 152-5
KY. 152-4
KY. 152-3
KY. 152-2
KY. 152-1
1 REMOCON Vcc IN
2 REMOCON SIG OUT
3 GND IN
4 GND IN
5 FOOT SW OUT
6 REC TALLY IN
CN001
REMOTE
CN002
REMOTE 2
C1
0.01
:CA
CN2
AU (1/2). 314-4
AU (1/2). 314-3
AU (1/2). 314-2
AU (1/2). 314-1
1 CH-1 MIC (X) OUT
2 CH-1 MIC (Y) OUT
3 CH-1 MIC (G) OUT
4 L:CH-1 MIC OUT
CN003
MIC IN

CN-633
1-641-584-11 (1)
SVO-9500MDP


CN501
CN502
CN503
CN504
CN002
CN003
CN001
CN004
CP-183
1-641-581
SONY
MADE IN JAPAN
A
CN506
F
DIP
S1
OFF
ON


CN502
LOT NO
S NO
CN504
CN505
CP-183
SONY
MADE IN JAP
A
B
C
D

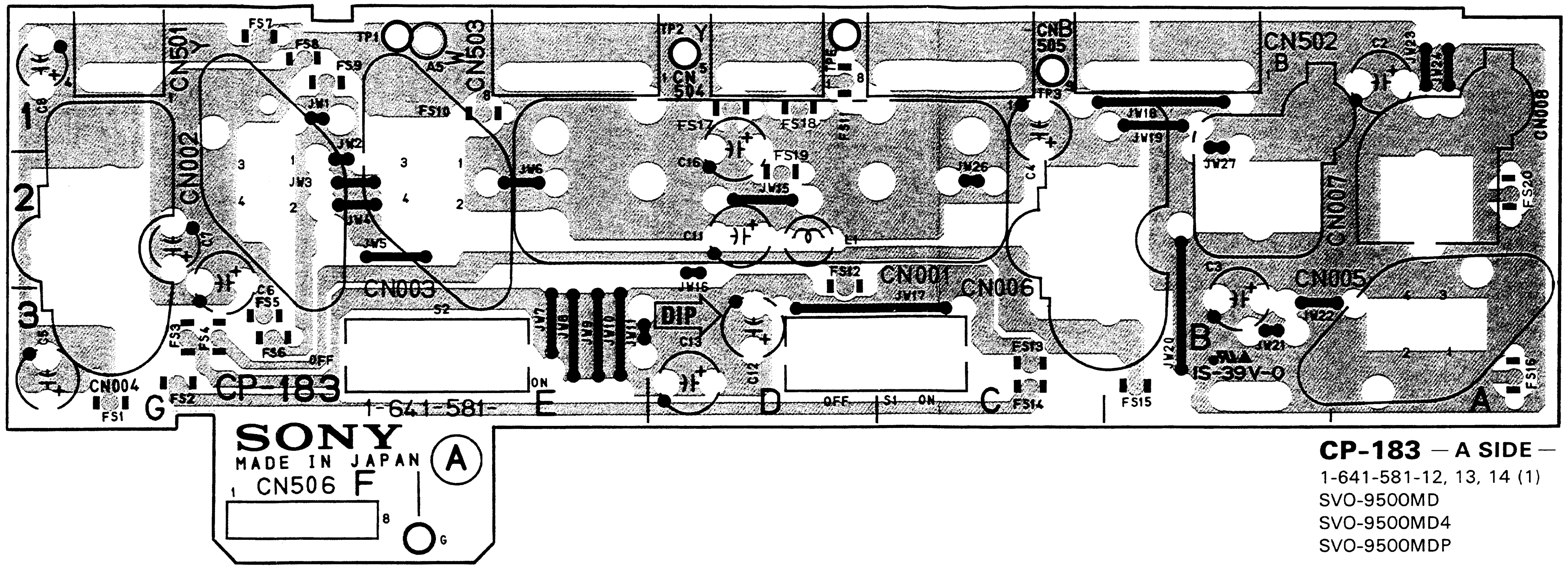

1 KY 6
CN2w
1 AU 4
CN1 CN-633
SONY 1-641-584-11
CN001 JAPAN B
C1
CN002
CN003

CN-633 — B SIDE —
1-641-584-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

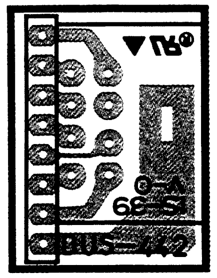
1
TE

2
TE 2

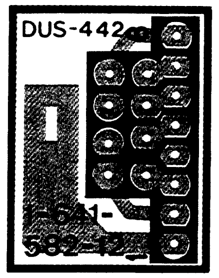
103
IN


CP-183
1-641-581-
SONY
MADE IN JAPAN
Ⓐ
CN506
CN501
CN503
CN504
CN505
CN502
CN002
CN003
CN001
CN006
CN007
CN008
CN005
CN004
DIP
IS-39V-0
TP1
TP2
TP3
A
B
C
D
E
F
G

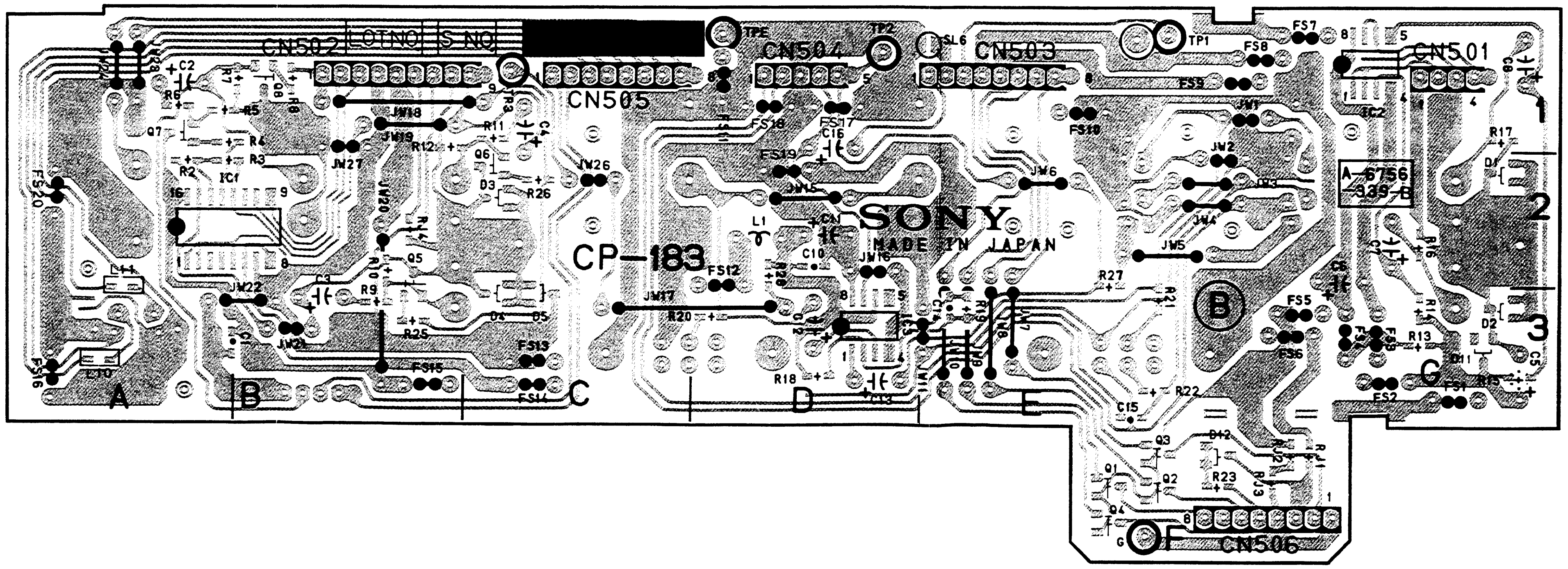
CP-183 – A SIDE –
1-641-581-12, 13, 14 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP



DUS-442 – A SIDE –
1-641-582-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

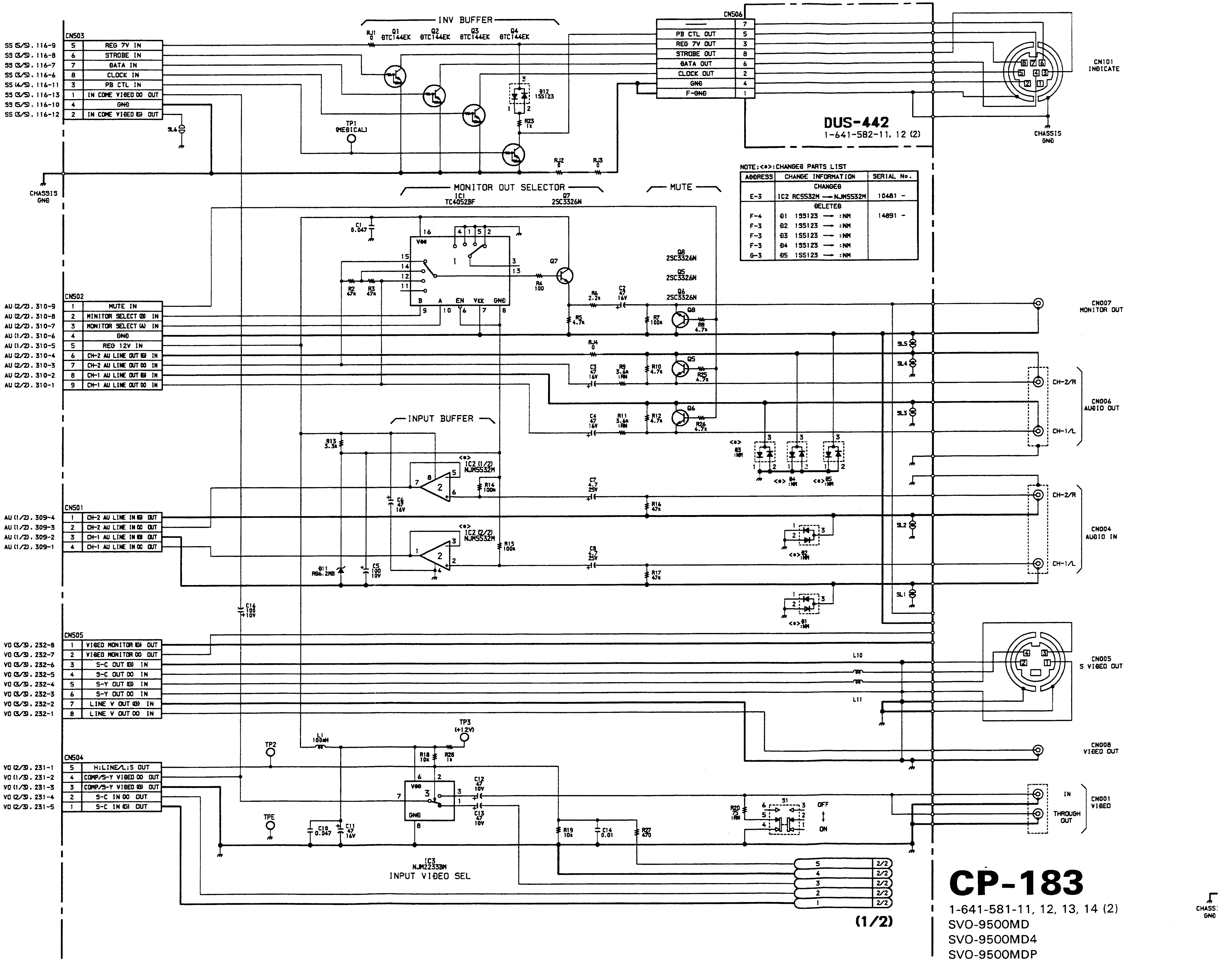

DUS-442
1-641-582-12

DUS-442 – B SIDE –
1-641-582-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


CP-183
SONY
MADE IN JAPAN
CN502
LOT NO
S NO
CN504
CN503
CN501
CN505
CN506
IC1
IC2
A-6756-339-B
Ⓑ
A
B
C
D
E
F
G
1
2
3

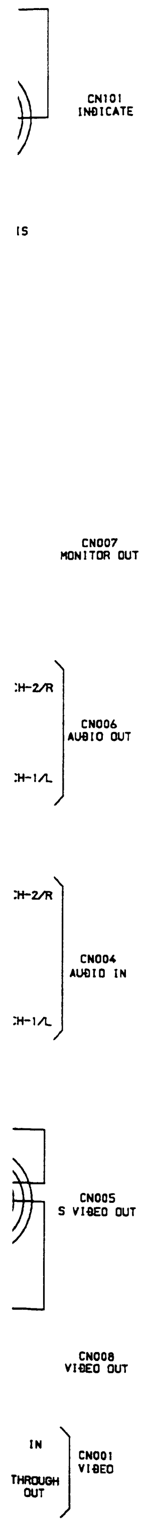
CP-183 – B SIDE –
1-641-581-12, 13, 14 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

CP-183 ; CONNECTION of REAR CONNECTOR
DUS-442 ; INDICATE CONNECTOR


CN503
SS (5/5). 116-9 | 5 | REG 7V IN
SS (3/5). 116-8 | 6 | STROBE IN
SS (3/5). 116-7 | 7 | DATA IN
SS (3/5). 116-6 | 8 | CLOCK IN
SS (4/5). 116-11 | 3 | PB CTL IN
SS (3/5). 116-13 | 1 | IN COME VIDEO (X) OUT
SS (5/5). 116-10 | 4 | GND
SS (3/5). 116-12 | 2 | IN COME VIDEO (G) OUT
SL6
CHASSIS GND
INV BUFFER
RJ1 0
Q1 DTC144EK
Q2 DTC144EK
Q3 DTC144EK
Q4 DTC144EK
TP1 (MEDICAL)
D12 1SS123
R23 1k
RJ2 0
RJ3 0
CN506
PB CTL OUT 5
REG 7V OUT 3
STROBE OUT 8
DATA OUT 6
CLOCK OUT 2
GND 4
F-GND 1
7
CN101 INDICATE
CHASSIS GND
DUS-442
1-641-582-11, 12 (2)
MONITOR OUT SELECTOR
IC1 TC4052BF
Q7 2SC3326N
MUTE
C1 0.047
VDD
B A EN VEE GND
R2 47k
R3 47k
R4 100
Q8 2SC3326N
Q5 2SC3326N
Q6 2SC3326N
R6 2.2k
C2 47 16V
R5 4.7k
R7 100k
R8 4.7k
RJ4 0
C3 47 16V
R9 3.6k :NM
R10 4.7k
R25 4.7k
C4 47 16V
R11 3.6k :NM
R12 4.7k
R26 4.7k
CN502
AU (2/2). 310-9 | 1 | MUTE IN
AU (2/2). 310-8 | 2 | MINITOR SELECT (B) IN
AU (2/2). 310-7 | 3 | MONITOR SELECT (A) IN
AU (1/2). 310-6 | 4 | GND
AU (1/2). 310-5 | 5 | REG 12V IN
AU (2/2). 310-4 | 6 | CH-2 AU LINE OUT (G) IN
AU (2/2). 310-3 | 7 | CH-2 AU LINE OUT (X) IN
AU (2/2). 310-2 | 8 | CH-1 AU LINE OUT (G) IN
AU (2/2). 310-1 | 9 | CH-1 AU LINE OUT (X) IN
CN007 MONITOR OUT
SL5
SL4
SL3
CH-2/R
CH-1/L
CN006 AUDIO OUT
INPUT BUFFER
R13 3.3k
<*> IC2 (1/2) NJM5532M
R14 100k
C6 47 16V
<*> IC2 (2/2) NJM5532M
R15 100k
D11 RD6.2MB
C5 100 10V
C7 4.7 25V
R16 47k
C8 4.7 25V
R17 47k
<*> D3 :NM
<*> D4 :NM
<*> D5 :NM
<*> D2 :NM
<*> D1 :NM
SL2
SL1
CN501
AU (1/2). 309-4 | 1 | CH-2 AU LINE IN (G) OUT
AU (1/2). 309-3 | 2 | CH-2 AU LINE IN (X) OUT
AU (1/2). 309-2 | 3 | CH-1 AU LINE IN (G) OUT
AU (1/2). 309-1 | 4 | CH-1 AU LINE IN (X) OUT
CH-2/R
CH-1/L
CN004 AUDIO IN
C16 100 10V
CN505
VO (3/3). 232-8 | 1 | VIDEO MONITOR (G) OUT
VO (3/3). 232-7 | 2 | VIDEO MONITOR (X) OUT
VO (3/3). 232-6 | 3 | S-C OUT (G) IN
VO (3/3). 232-5 | 4 | S-C OUT (X) IN
VO (3/3). 232-4 | 5 | S-Y OUT (G) IN
VO (3/3). 232-3 | 6 | S-Y OUT (X) IN
VO (3/3). 232-2 | 7 | LINE V OUT (G) IN
VO (3/3). 232-1 | 8 | LINE V OUT (X) IN
L10
L11
CN005 S VIDEO OUT
CN008 VIDEO OUT
TP3 (+12V)
L1 100uH
TP2
R18 10k
R28 1k
CN504
VO (2/3). 231-1 | 5 | H:LINE/L:S OUT
VO (1/3). 231-2 | 4 | COMP/S-Y VIDEO (X) OUT
VO (1/3). 231-3 | 3 | COMP/S-Y VIDEO (G) OUT
VO (2/3). 231-4 | 2 | S-C IN (X) OUT
VO (2/3). 231-5 | 1 | S-C IN (G) OUT
TPE
C10 0.047
C11 47 16V
VDD
GND
C12 47 10V
C13 47 10V
R19 10k
C14 0.01
R27 470
R20 75 :NM
S1
OFF
ON
IN
THROUGH OUT
CN001 VIDEO
IC3 NJM2233BM
INPUT VIDEO SEL
5 2/2
4 2/2
3 2/2
2 2/2
1 2/2
(1/2)
CP-183
1-641-581-11, 12, 13, 14 (2)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP
CHASSIS GND

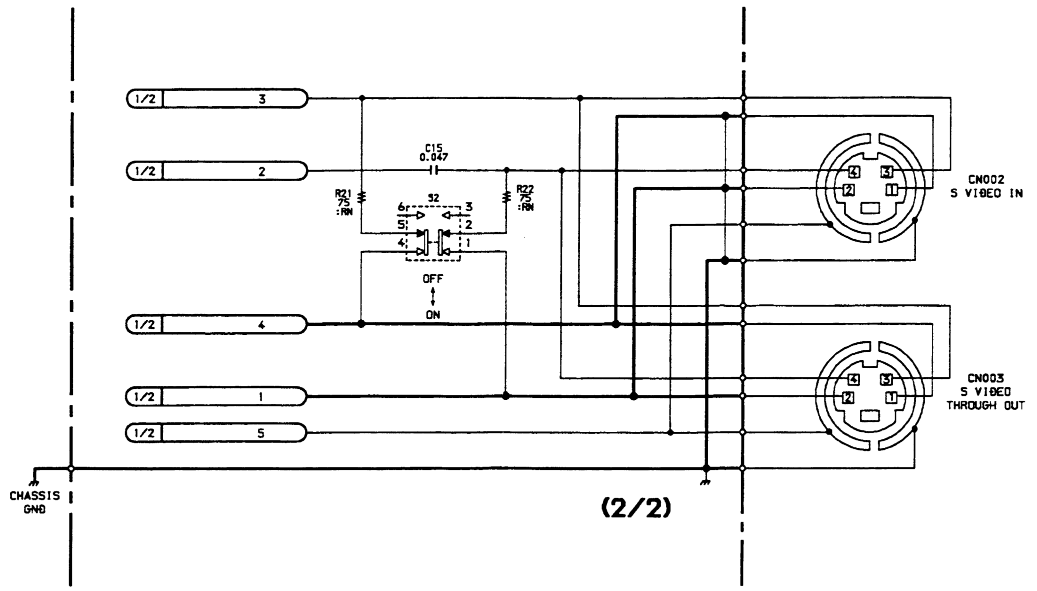
NOTE:<*>:CHANGED PARTS LIST

ADDRESS	CHANGE INFORMATION	SERIAL No.
	CHANGED	
E-3	IC2 RC5532M → NJM5532M	10481 -
	DELETED	
F-4	D1 1SS123 → :NM	14891 -
F-3	D2 1SS123 → :NM	
F-3	D3 1SS123 → :NM	
F-3	D4 1SS123 → :NM	
G-3	D5 1SS123 → :NM	


CN101
INDICATE
IS
CN007
MONITOR OUT
:H-2/R
CN006
AUDIO OUT
:H-1/L
:H-2/R
CN004
AUDIO IN
:H-1/L
CN005
S VIDEO OUT
CN008
VIDEO OUT
IN
THROUGH
OUT
CN001
VIDEO

33

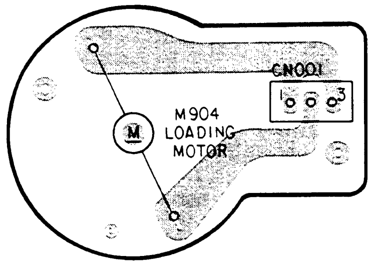
, 13, 14 (2)


1/2
3
1/2
2
1/2
4
1/2
1
1/2
5
C15
0.047
R21
75
:RN
R22
75
:RN
S2
6
5
4
3
2
1
OFF
ON
CN002
S VIDEO IN
CN003
S VIDEO
THROUGH OUT
CHASSIS
GND
4
3
2
1
(2/2)

FRAME (1/2) S/N 10001 to 12290 (EK)

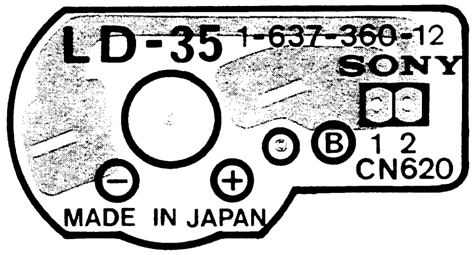
CM-14 ; CASSETTE COMPARTMENT MOTOR

LD-35 ; LOADING MOTOR


CN001
3
M904
LOADING
MOTOR

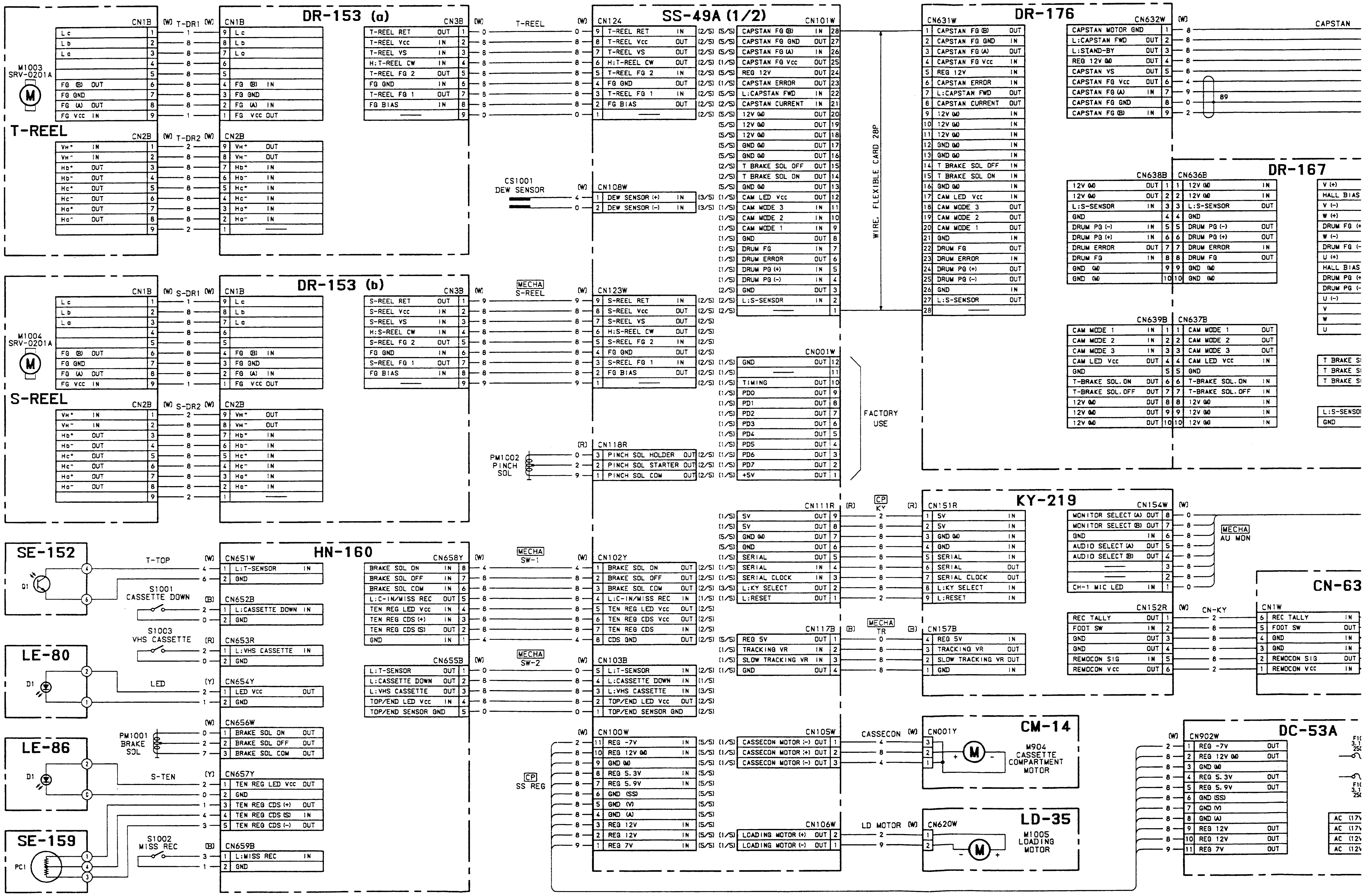
CM-14 — B SIDE —

1-630-505-21 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

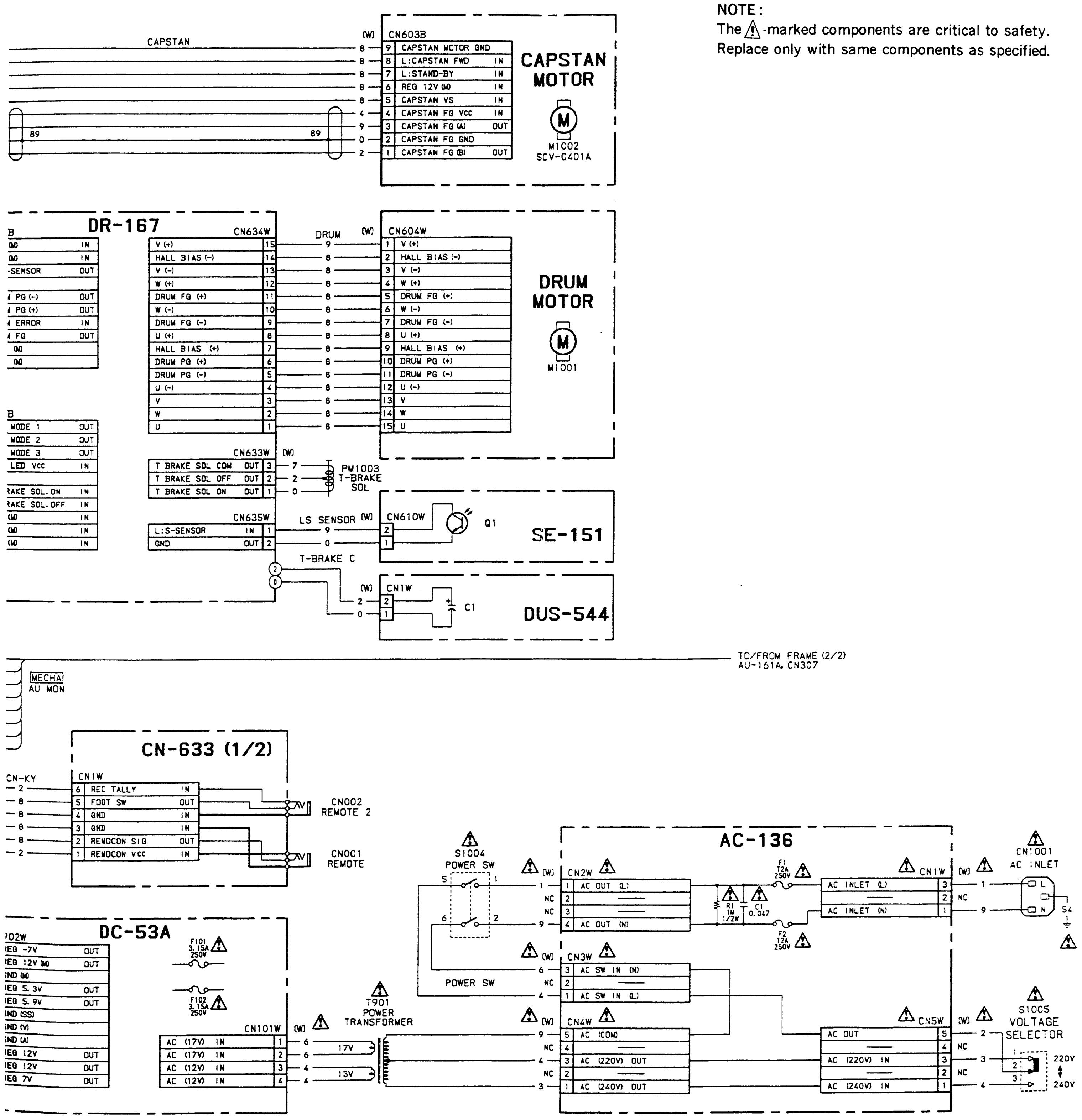

LD-35 1-637-360-12
SONY
1 2
CN620
MADE IN JAPAN

LD-35 — B SIDE —

1-637-360-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


T-REEL
M1003
SRV-0201A
CN1B
T-DR1
CN2B
T-DR2
DR-153 (a)
CN3B
T-REEL
SS-49A (1/2)
CN124
CN101W
S-REEL
M1004
SRV-0201A
S-DR1
S-DR2
DR-153 (b)
MECHA
S-REEL
CN123W
CS1001
DEW SENSOR
CN108W
PM1C02
PINCH
SOL
CN118R
CN001W
FACTORY
USE
WIRE, FLEXIBLE CARD 28P
DR-176
CN631W
CN632W
CAPSTAN
DR-167
CN638B
CN636B
CN639B
CN637B
KY-219
CN151R
CN154W
CN111R
CP
KY
MECHA
AU MON
CN152R
CN-KY
CN-63
CN1W
CN157B
CN117B
MECHA
TR
SE-152
T-TOP
HN-160
CN651W
CN658Y
MECHA
SW-1
CN102Y
S1001
CASSETTE DOWN
CN652B
S1003
VHS CASSETTE
CN653R
LE-80
LED
CN654Y
CN655B
MECHA
SW-2
CN103B
LE-86
PM1001
BRAKE
SOL
CN656W
S-TEN
CN657Y
CP
SS REG
CN100W
CN105W
CASSECON
CM-14
CN001Y
M904
CASSETTE
COMPARTMENT
MOTOR
SE-159
S1002
MISS REC
CN659B
CN106W
LD MOTOR
CN620W
LD-35
M1005
LOADING
MOTOR
DC-53A
CN902W

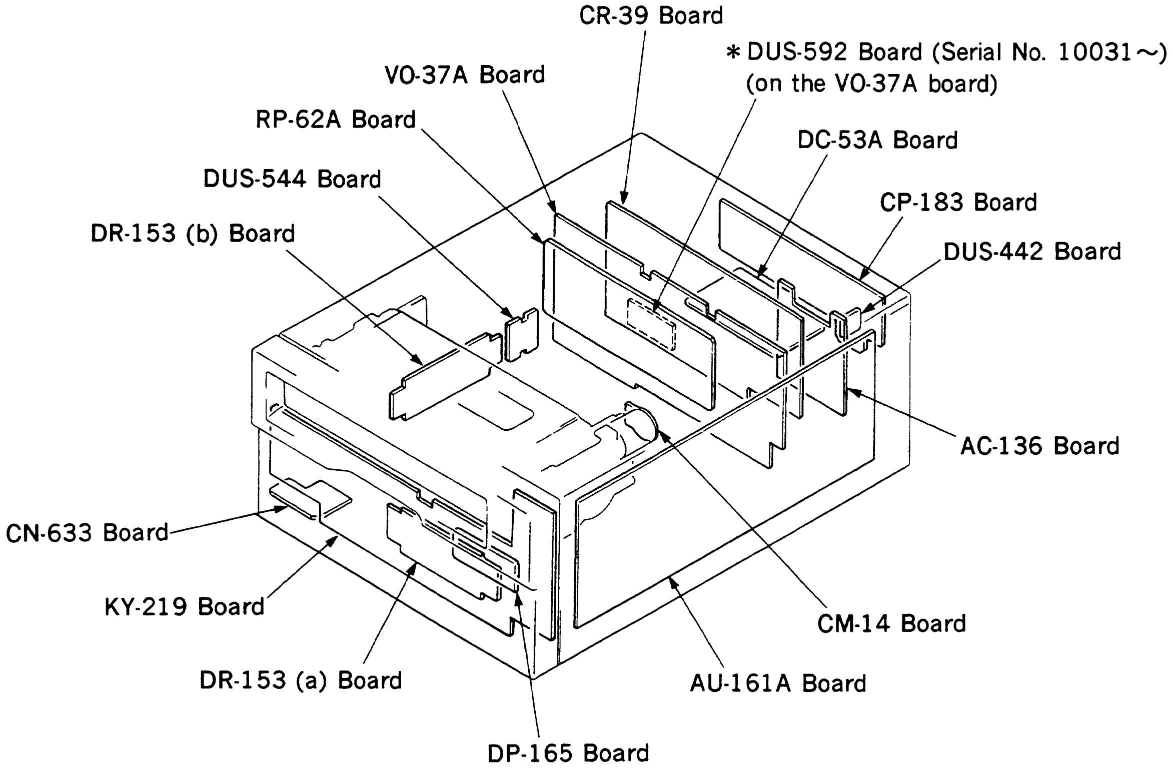
NOTE:
The ⚠-marked components are critical to safety.
Replace only with same components as specified.

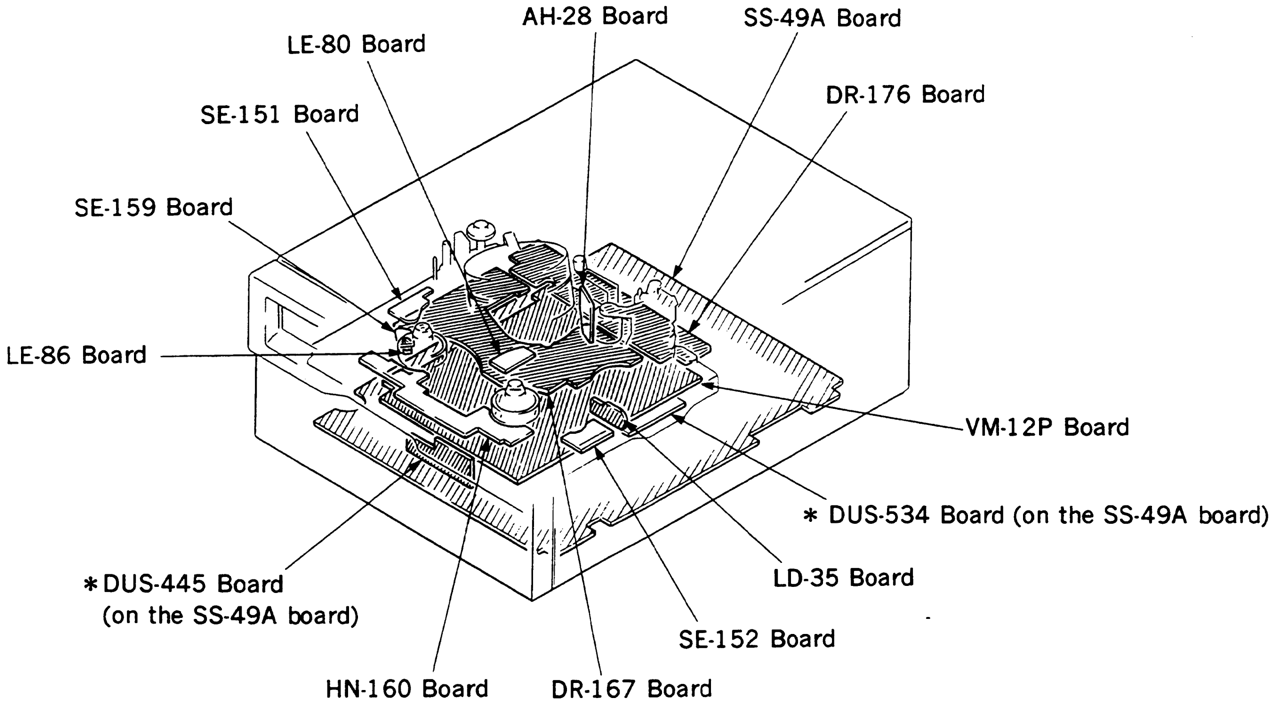

CAPSTAN
CN603B
CAPSTAN MOTOR
M1002
SCV-0401A
DR-167
CN634W
DRUM
CN604W
DRUM MOTOR
M1001
CN633W
PM1003 T-BRAKE SOL
CN635W
LS SENSOR
CN610W
Q1
SE-151
T-BRAKE C
CN1W
C1
DUS-544
TO/FROM FRAME (2/2) AU-161A, CN307
MECHA AU MON
CN-633 (1/2)
CN-KY
CN002 REMOTE 2
CN001 REMOTE
S1004 POWER SW
POWER SW
AC-136
CN2W
CN3W
CN4W
CN1W
CN5W
F1 T2A 250V
F2 T2A 250V
R1 1M 1/2W
C1 0.047
CN1001 AC INLET
S4
S1005 VOLTAGE SELECTOR
220V
240V
DC-53A
F101 3.15A 250V
F102 3.15A 250V
CN101W
T901 POWER TRANSFORMER
17V
13V

FRAME (1/2)

SVO-9500MDP (1)

LOCATION OF PRINTED CIRCUIT BOARD


CR-39 Board
∗DUS-592 Board (Serial No. 10031∼)
(on the VO-37A board)
VO-37A Board
RP-62A Board
DC-53A Board
DUS-544 Board
CP-183 Board
DR-153 (b) Board
DUS-442 Board
AC-136 Board
CN-633 Board
KY-219 Board
CM-14 Board
DR-153 (a) Board
AU-161A Board
DP-165 Board

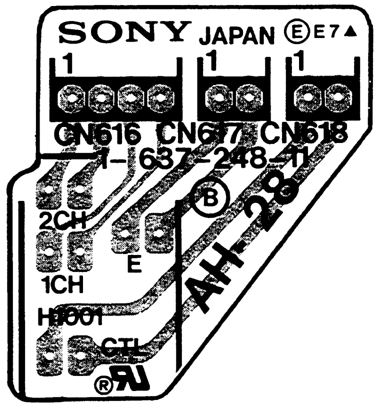

AH-28 Board
SS-49A Board
LE-80 Board
DR-176 Board
SE-151 Board
SE-159 Board
LE-86 Board
VM-12P Board
∗DUS-534 Board (on the SS-49A board)
∗DUS-445 Board
(on the SS-49A board)
LD-35 Board
SE-152 Board
HN-160 Board
DR-167 Board

NOTE:
Printed circuit boards marked with ∗ on the above illustrations are omitted from the frame diagrams.

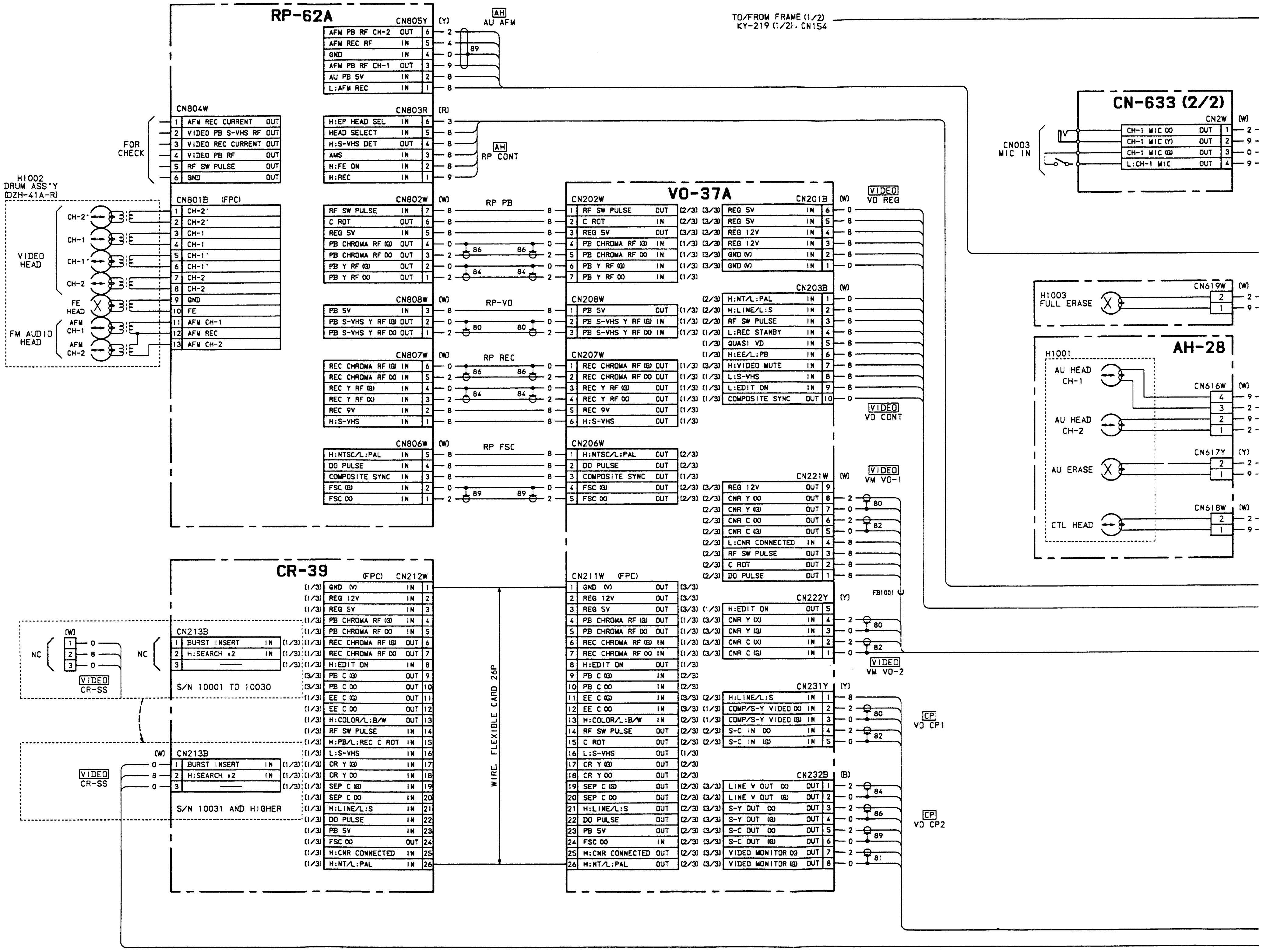
FRAME (2/2), AH-28

FRAME (2/2) S/N 10001 to 12290 (EK)

AH-28 ; AUDIO/ERASE/CTL HEAD

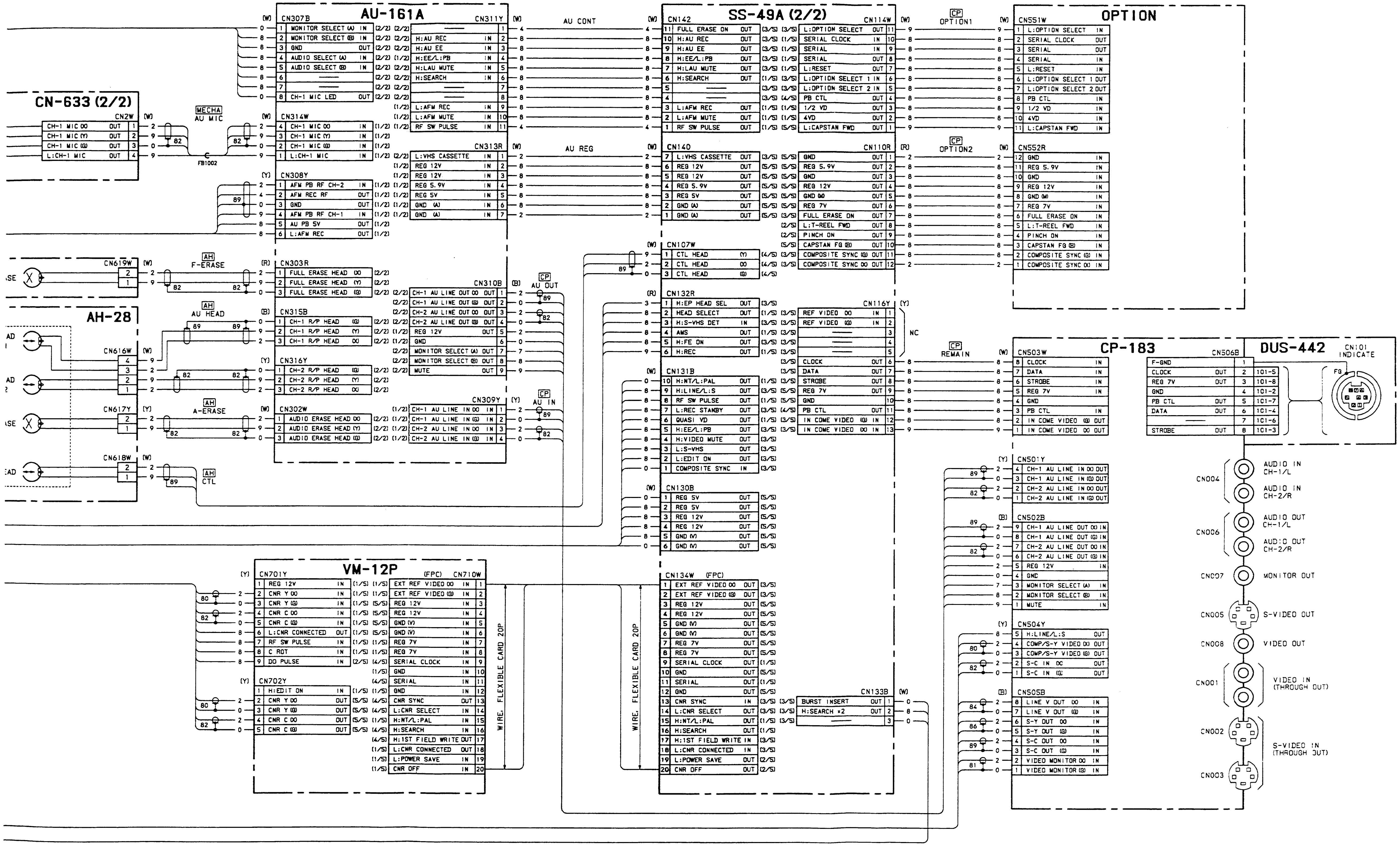

SONY JAPAN Ⓔ E7
CN616
CN617
CN618
1-637-248-11
2CH
1CH
E
H1001
CTL
AH-28

AH-28 — B SIDE —
1-637-248-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


RP-62A
CN805Y
AH AU AFM
CN804W
FOR CHECK
CN803R
AH RP CONT
H1002 DRUM ASS'Y (DZH-41A-R)
VIDEO HEAD
FE HEAD
FM AUDIO HEAD
CN801B (FPC)
CN802W
RP PB
CN808W
RP-VO
CN807W
RP REC
CN806W
RP FSC
VO-37A
CN202W
CN201B
VIDEO VO REG
CN208W
CN203B
CN207W
VIDEO VO CONT
CN206W
CN221W
VIDEO VM VO-1
CN211W (FPC)
CN222Y
VIDEO VM VO-2
CN231Y
CP VO CP1
CN232B
CP VO CP2
WIRE, FLEXIBLE CARD 26P
CR-39
CN212W
CN213B
NC
VIDEO CR-SS
S/N 10001 TO 10030
S/N 10031 AND HIGHER
TO/FROM FRAME (1/2) KY-219 (1/2), CN154
CN-633 (2/2)
CN2W
CN003 MIC IN
H1003 FULL ERASE
CN619W
AH-28
H1001
AU HEAD CH-1
AU HEAD CH-2
AU ERASE
CTL HEAD
CN616W
CN617Y
CN618W

13-59

FRAME (2/2), AH-28


CN-633 (2/2)
CN2W
AH-28
CN619W
CN616W
CN617Y
CN618W
MECHA AU MIC
FB1002
AH F-ERASE
AH AU HEAD
AH A-ERASE
AH CTL
AU-161A
CN307B
CN311Y
CN314W
CN313R
CN308Y
CN303R
CN310B
CN315B
CN316Y
CN309Y
CN302W
CP AU OUT
CP AU IN
AU CONT
AU REG
SS-49A (2/2)
CN142
CN114W
CN140
CN110R
CN107W
CN132R
CN116Y
NC
CN131B
CN130B
CN134W (FPC)
CN133B
WIRE, FLEXIBLE CARD 20P
VM-12P
CN701Y
CN702Y
(FPC) CN710W
CP OPTION1
CP OPTION2
CP REMAIN
OPTION
CN551W
CN552R
CP-183
CN503W
CN501Y
CN502B
CN504Y
CN505B
DUS-442
CN506B
CN101 INDICATE
FG
CN004
AUDIO IN CH-1/L
AUDIO IN CH-2/R
CN006
AUDIO OUT CH-1/L
AUDIO OUT CH-2/R
CN007
MONITOR OUT
CN005
S-VIDEO OUT
CN008
VIDEO OUT
CN001
VIDEO IN (THROUGH OUT)
CN002
S-VIDEO IN (THROUGH OUT)
CN003
1
2
3
4
5
H
I
J
K
L
M
N
O
P

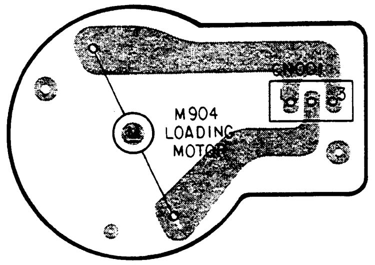
FRAME (2/2)

SVO-9500MDP (1)

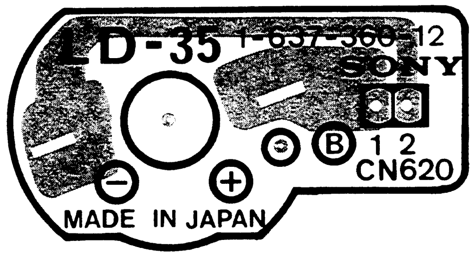
13-59

FRAME (1/2) S/N 12291 and higher (EK)

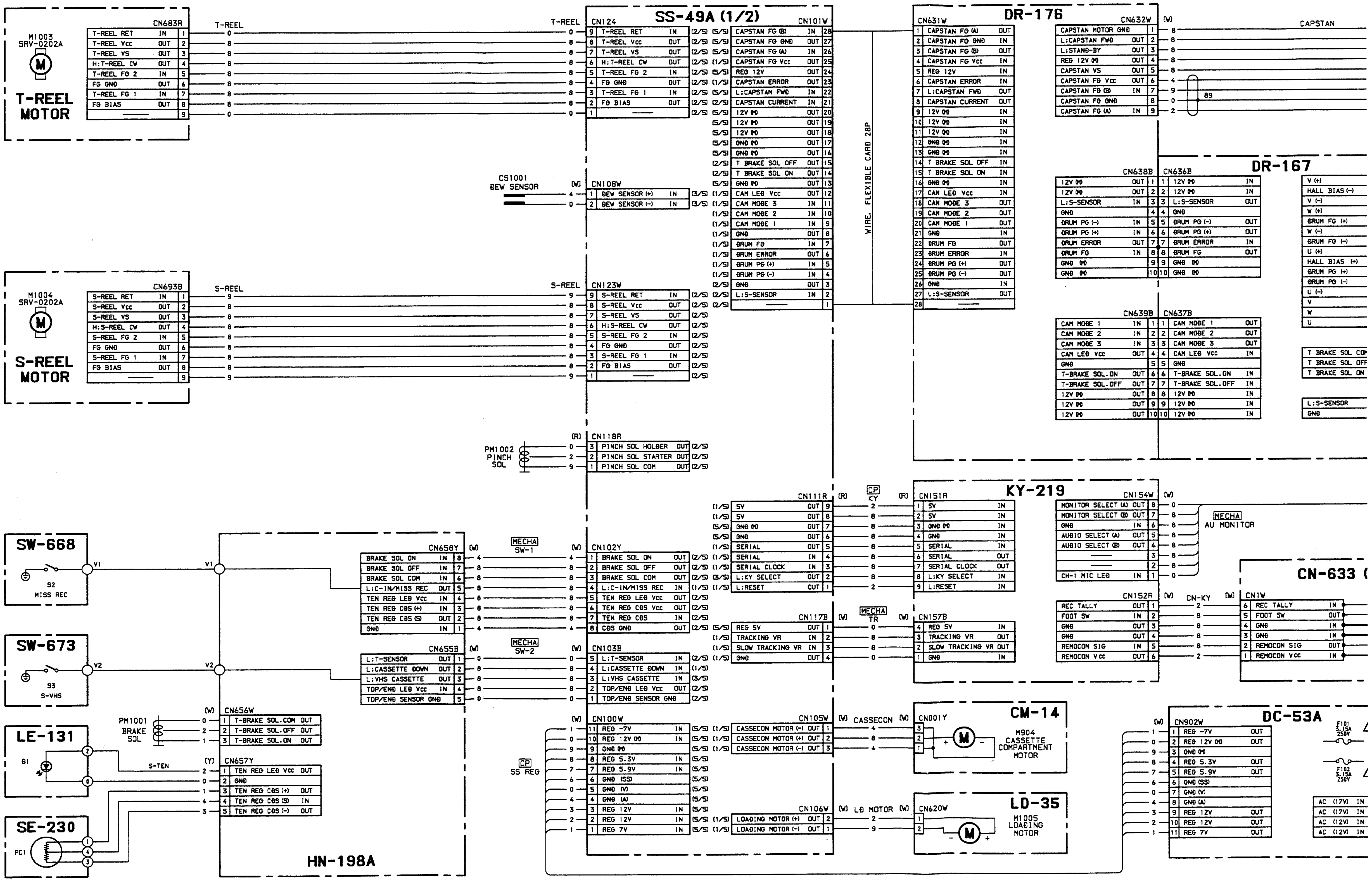
CM-14; CASSETTE COMPARTMENT MOTOR
LD-35; LOADING MOTOR


M904
LOADING MOTOR

CM-14 – B SIDE –
1-630-505-21 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP

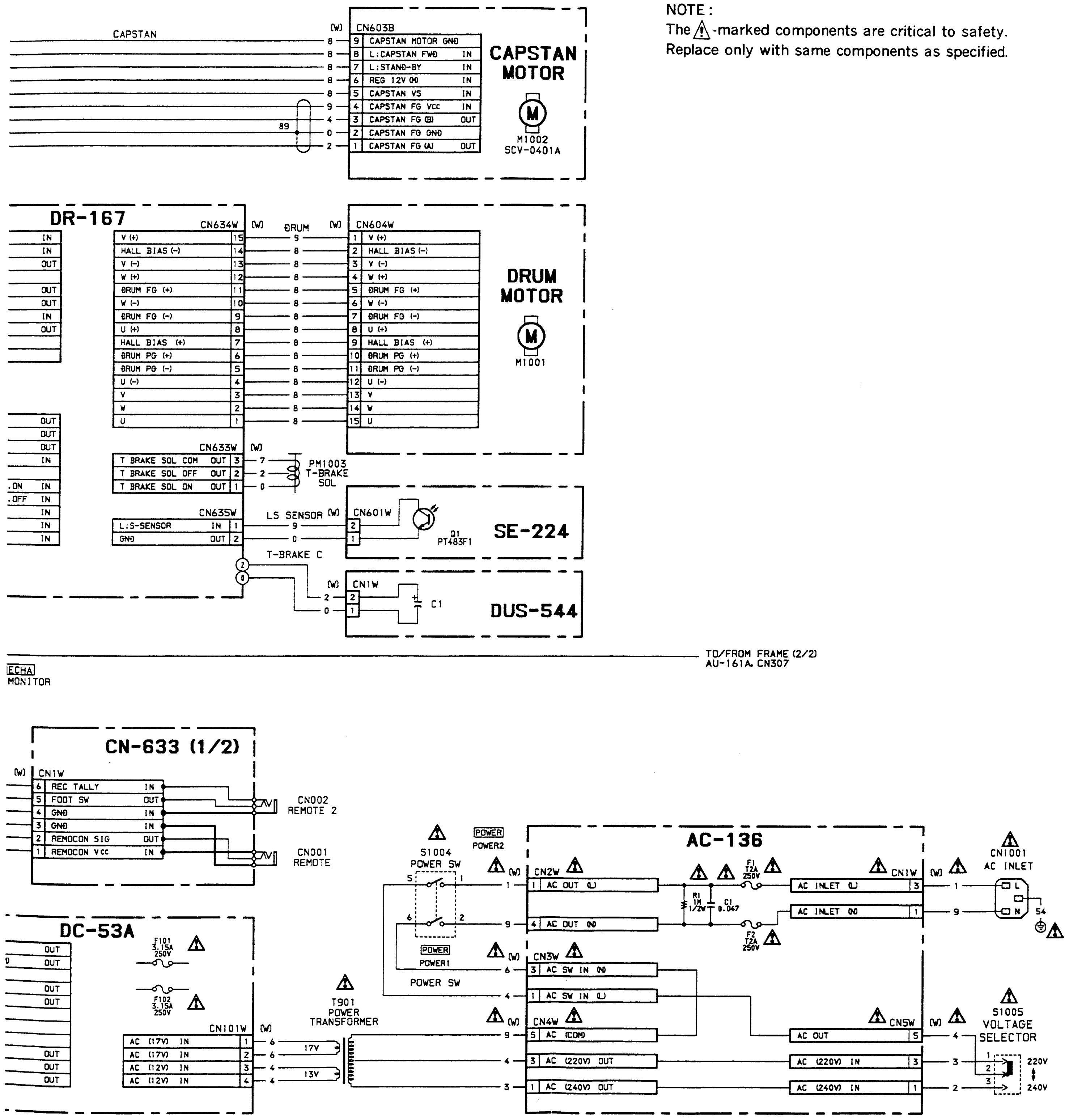

LD-35 1-637-360-12
SONY
1 2
CN620
MADE IN JAPAN

LD-35 – B SIDE –
1-637-360-12 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


T-REEL MOTOR
M1003 SRV-0202A
CN683R
S-REEL MOTOR
M1004 SRV-0202A
CN693B
SS-49A (1/2)
CN124
CN101W
CN108W
CS1001 DEW SENSOR
CN123W
CN118R
PM1002 PINCH SOL
WIRE, FLEXIBLE CARD 28P
DR-176
CN631W
CN632W
CAPSTAN
DR-167
CN638B
CN636B
CN639B
CN637B
KY-219
CN111R
CN151R
CN154W
MECHA AU MONITOR
CN-633
CN152R
CN-KY
CN1W
SW-668
S2 MISS REC
SW-673
S3 S-VHS
LE-131
SE-230
PM1001 BRAKE SOL
S-TEN
HN-198A
CN658Y
CN655B
CN656W
CN657Y
MECHA SW-1
MECHA SW-2
CN102Y
CN103B
CN117B
MECHA TR
CN157B
CP SS REG
CN100W
CN105W
CASSECON
CN001Y
CM-14
M904 CASSETTE COMPARTMENT MOTOR
CN106W
LD MOTOR
CN620W
LD-35
M1005 LOADING MOTOR
DC-53A
CN902W

FRAME (1/2), CM-14, LD-35

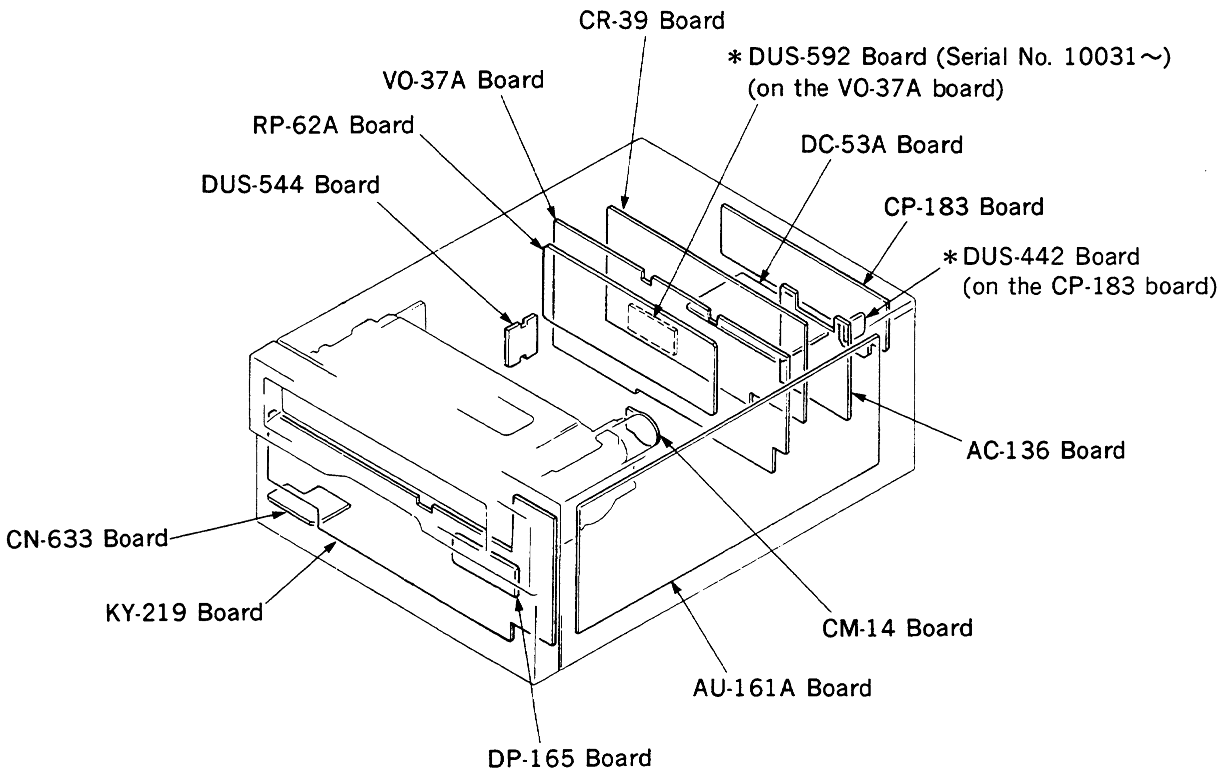
NOTE:
The ⚠-marked components are critical to safety.
Replace only with same components as specified.

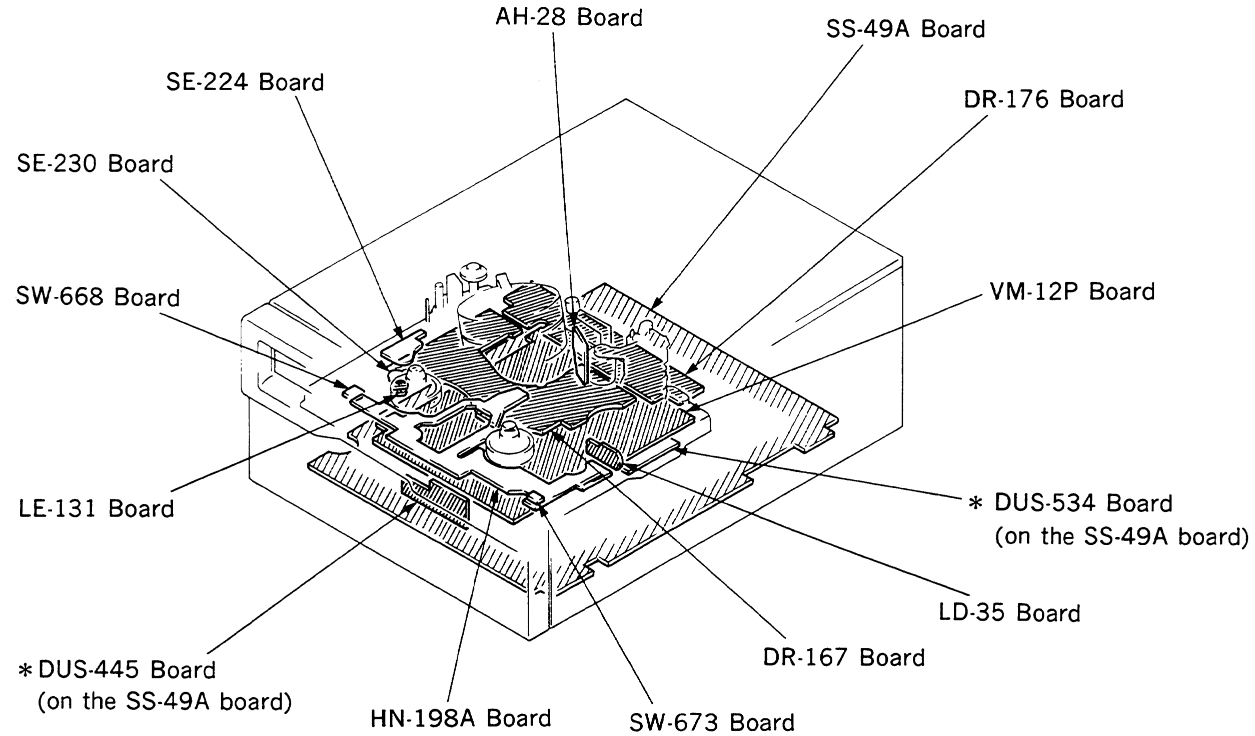

CAPSTAN
(W)
CN603B
9 CAPSTAN MOTOR GND
8 L:CAPSTAN FWD IN
7 L:STAND-BY IN
6 REG 12V (M) IN
5 CAPSTAN VS IN
4 CAPSTAN FG Vcc IN
3 CAPSTAN FG (B) OUT
2 CAPSTAN FG GND
1 CAPSTAN FG (A) OUT
89
CAPSTAN MOTOR
M
M1002
SCV-0401A
DR-167
CN634W
DRUM
CN604W
V (+)
HALL BIAS (−)
V (−)
W (+)
DRUM FG (+)
W (−)
DRUM FG (−)
U (+)
HALL BIAS (+)
DRUM PG (+)
DRUM PG (−)
U (−)
V
W
U
DRUM MOTOR
M1001
CN633W
T BRAKE SOL COM OUT
T BRAKE SOL OFF OUT
T BRAKE SOL ON OUT
PM1003
T-BRAKE
SOL
CN635W
L:S-SENSOR IN
GND OUT
LS SENSOR
CN601W
Q1
PT483F1
SE-224
T-BRAKE C
CN1W
C1
DUS-544
TO/FROM FRAME (2/2)
AU-161A CN307
MECHA
MONITOR
CN-633 (1/2)
CN1W
6 REC TALLY IN
5 FOOT SW OUT
4 GND IN
3 GND IN
2 REMOCON SIG OUT
1 REMOCON Vcc IN
CN002
REMOTE 2
CN001
REMOTE
DC-53A
F101
3.15A
250V
F102
3.15A
250V
CN101W
AC (17V) IN
AC (17V) IN
AC (12V) IN
AC (12V) IN
17V
13V
T901
POWER
TRANSFORMER
S1004
POWER SW
POWER
POWER2
POWER
POWER1
POWER SW
AC-136
CN2W
1 AC OUT (L)
4 AC OUT (N)
R1
1M
1/2W
C1
0.047
F1
T2A
250V
F2
T2A
250V
CN1W
AC INLET (L)
AC INLET (N)
CN1001
AC INLET
L
N
54
CN3W
3 AC SW IN (N)
1 AC SW IN (L)
CN4W
5 AC (COM)
3 AC (220V) OUT
1 AC (240V) OUT
CN5W
AC OUT
AC (220V) IN
AC (240V) IN
S1005
VOLTAGE
SELECTOR
220V
240V

FRAME (1/2)

SVO-9500MDP (1)

LOCATION OF PRINTED CIRCUIT BOARD

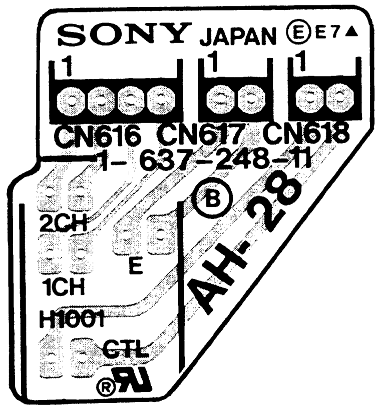

CR-39 Board
∗DUS-592 Board (Serial No. 10031∼)
(on the VO-37A board)
VO-37A Board
RP-62A Board
DC-53A Board
DUS-544 Board
CP-183 Board
∗DUS-442 Board
(on the CP-183 board)
AC-136 Board
CN-633 Board
KY-219 Board
CM-14 Board
AU-161A Board
DP-165 Board


AH-28 Board
SS-49A Board
SE-224 Board
DR-176 Board
SE-230 Board
SW-668 Board
VM-12P Board
LE-131 Board
∗ DUS-534 Board
(on the SS-49A board)
LD-35 Board
∗DUS-445 Board
(on the SS-49A board)
DR-167 Board
HN-198A Board
SW-673 Board

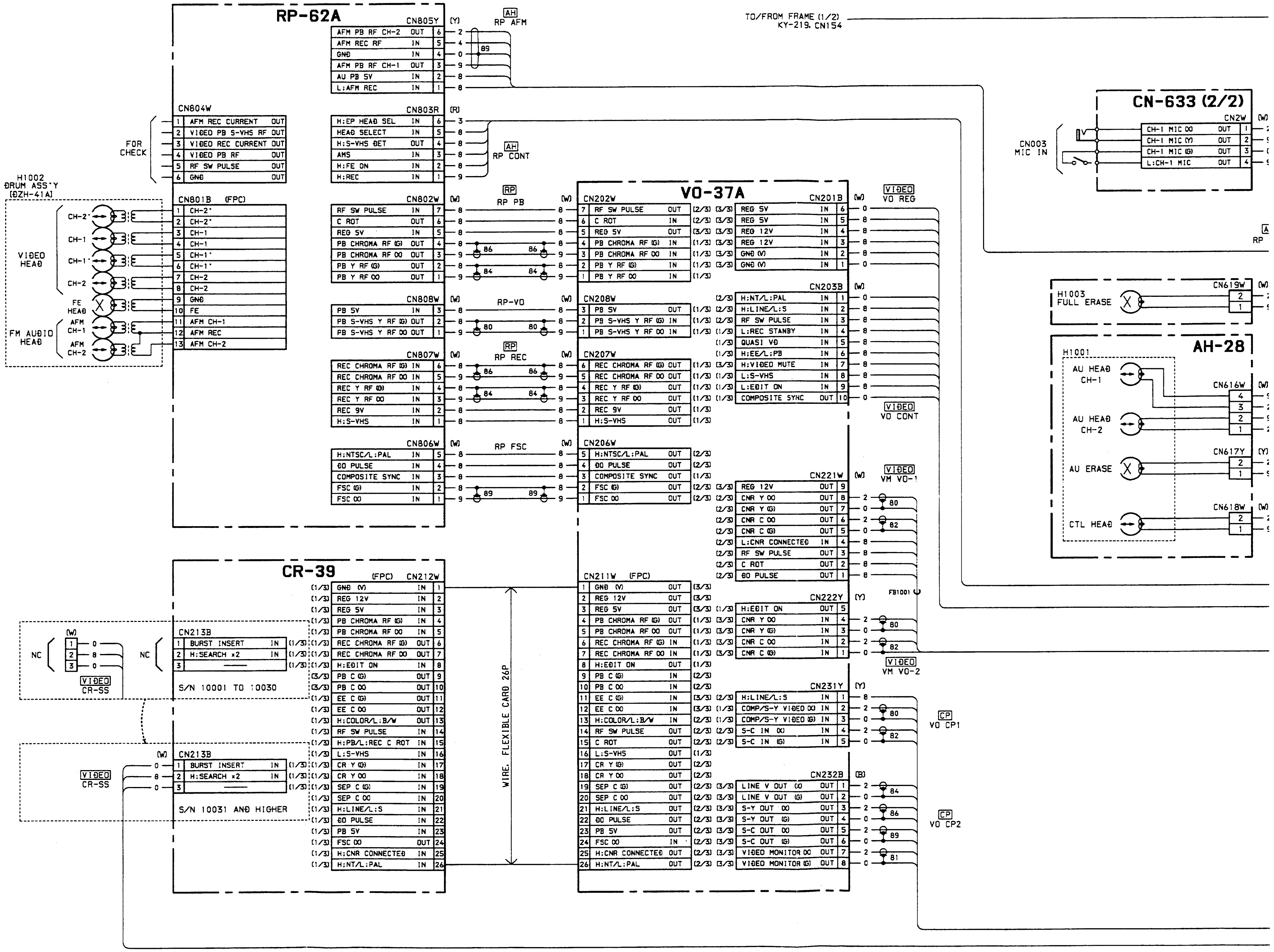
NOTE:
Printed circuit boards marked with ∗ on the above illustrations are omitted from the frame diagrams.

FRAME (2/2) **S/N 12291 and higher (EK)**

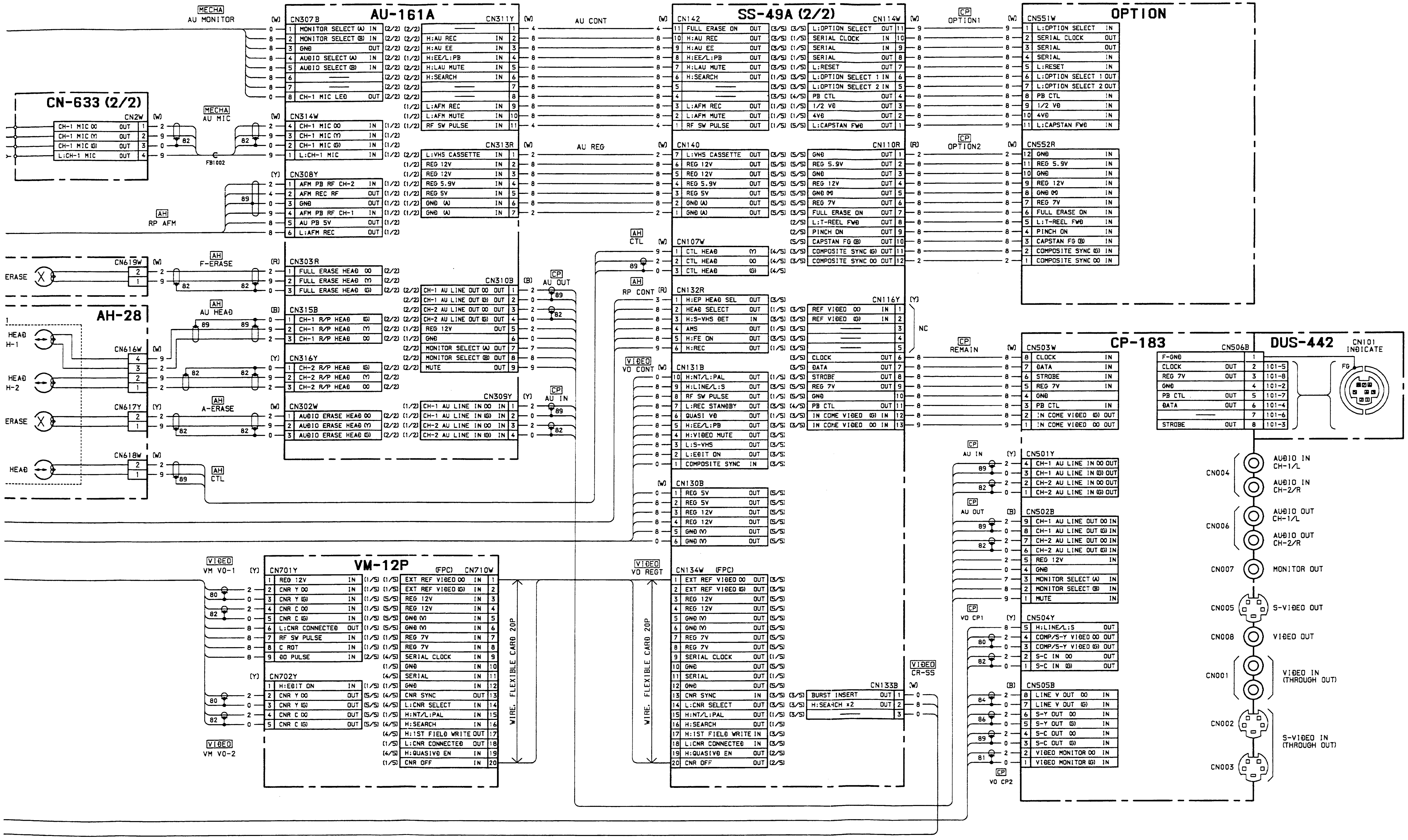
AH-28 ; AUDIO/ERASE/CTL HEAD


SONY JAPAN Ⓔ E7▲
CN616
CN617
CN618
1-637-248-11
Ⓑ
AH-28
2CH
1CH
E
H1001
CTL

AH-28 — B SIDE —
1-637-248-11 (1)
SVO-9500MD
SVO-9500MD4
SVO-9500MDP


RP-62A
CN805Y
CN804W
CN803R
CN801B (FPC)
CN802W
CN808W
CN807W
CN806W
FOR CHECK
H1002 DRUM ASS'Y (DZH-41A)
VIDEO HEAD
FE HEAD
FM AUDIO HEAD
AH RP AFM
AH RP CONT
RP RP PB
RP-VO
RP RP REC
RP FSC
TO/FROM FRAME (1/2) KY-219, CN154
CN-633 (2/2)
CN2W
CN003 MIC IN
VO-37A
CN202W
CN201B
CN208W
CN203B
CN207W
CN206W
CN221W
CN211W (FPC)
CN222Y
CN231Y
CN232B
VIDEO VO REG
VIDEO VO CONT
VIDEO VM VO-1
VIDEO VM VO-2
CP VO CP1
CP VO CP2
FB1001
H1003 FULL ERASE
CN619W
AH-28
H1001
AU HEAD CH-1
AU HEAD CH-2
AU ERASE
CTL HEAD
CN616W
CN617Y
CN618W
CR-39
(FPC) CN212W
CN213B
S/N 10001 TO 10030
S/N 10031 AND HIGHER
NC
VIDEO CR-SS
WIRE, FLEXIBLE CARD 26P

FRAME (2/2), AH-28


AU-161A
SS-49A (2/2)
OPTION
CN-633 (2/2)
AH-28
CP-183
DUS-442
VM-12P
MECHA AU MONITOR
MECHA AU MIC
AH RP AFM
AH F-ERASE
AH AU HEAD
AH A-ERASE
AH CTL
AH RP CONT
CP AU OUT
CP AU IN
CP OPTION1
CP OPTION2
CP REMAIN
CP VO CP1
CP VO CP2
VIDEO VM VO-1
VIDEO VM VO-2
VIDEO VO CONT
VIDEO VO REGT
VIDEO CR-SS
AU CONT
AU REG
CN307B
CN311Y
CN314W
CN313R
CN308Y
CN303R
CN310B
CN315B
CN316Y
CN302W
CN309Y
CN142
CN114W
CN140
CN110R
CN107W
CN132R
CN116Y
CN131B
CN130B
CN134W (FPC)
CN133B
CN551W
CN552R
CN503W
CN506B
CN501Y
CN502B
CN504Y
CN505B
CN101 INDICATE
CN701Y
CN710W
CN702Y
CN2W
CN619W
CN616W
CN617Y
CN618W
ERASE
HEAD H-1
HEAD H-2
ERASE
HEAD
FB1002
NC
WIRE. FLEXIBLE CARD 20P
WIRE. FLEXIBLE CARD 20P
CN004 AUDIO IN CH-1/L
AUDIO IN CH-2/R
CN006 AUDIO OUT CH-1/L
AUDIO OUT CH-2/R
CN007 MONITOR OUT
CN005 S-VIDEO OUT
CN008 VIDEO OUT
CN001 VIDEO IN (THROUGH OUT)
CN002
CN003 S-VIDEO IN (THROUGH OUT)
FG

FRAME (2/2)

SVO-9500MDP (1)

SS-49A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
This board of includes DUS-445 and DUS-534 boards.			
1pc	A-8271-315-A	o	MOUNTED CIRCUIT BOARD, SS-49A
3pcs	3-682-057-11	s	SPACER (SMALL)
2pcs	4-924-098-31	o	HOLDER, PC BOARD
2pcs	4-886-821-11	s	SCREW, M3 CASE
C101	1-126-993-11	s	ELECT 100uF 20% 16V
C102	1-126-935-11	s	ELECT 470uF 20% 16V
C103	1-125-498-11	s	DOUBLE LAYERS 1.0F 5.5V
C104	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C105	1-124-234-00	s	ELECT 22uF 20% 16V
C106	1-126-993-11	s	ELECT 100uF 20% 16V
C107	1-126-157-11	s	ELECT 10uF 20% 16V
C108	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C109	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C110	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C111	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C113	1-124-589-11	s	ELECT 47uF 20% 16V
C115	1-124-589-11	s	ELECT 47uF 20% 16V
C118	1-124-234-00	s	ELECT 22uF 20% 16V
C119	1-124-257-00	s	ELECT 2.2uF 20% 50V
C120	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C121	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C122	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C123	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C124	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C125	1-130-471-00	s	MYLAR 1000pF 5% 50V
C129	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C130	1-130-471-00	s	MYLAR 1000pF 5% 50V
C139	1-124-589-11	s	ELECT 47uF 20% 16V
C140	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C141	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C142	1-124-589-11	s	ELECT 47uF 20% 16V
C143	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C144	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C146	1-124-589-11	s	ELECT 47uF 20% 16V
C147	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C148	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C149	1-126-157-11	s	ELECT 10uF 20% 16V
C150	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C154	1-130-471-00	s	MYLAR 1000pF 5% 50V
C155	1-126-162-11	s	ELECT 3.3uF 20% 50V
C156	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C157	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C167	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C168	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C169	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C170	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C171	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C180	1-126-163-11	s	ELECT 4.7uF 20% 50V
C301	1-124-589-11	s	ELECT 47uF 20% 16V
C302	1-126-162-11	s	ELECT 3.3uF 20% 50V
C303	1-126-162-11	s	ELECT 3.3uF 20% 50V
C304	1-126-157-11	s	ELECT 10uF 20% 16V
C305	1-126-157-11	s	ELECT 10uF 20% 16V
C306	1-126-162-11	s	ELECT 3.3uF 20% 50V
C307	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C308	1-124-589-11	s	ELECT 47uF 20% 16V
C309	1-124-589-11	s	ELECT 47uF 20% 16V

(SS-49A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C310	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C311	1-124-242-00	s	ELECT 33uF 20% 25V
C312	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C313	1-124-242-00	s	ELECT 33uF 20% 25V
C314	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C315	1-124-242-00	s	ELECT 33uF 20% 25V
C316	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C317	1-124-242-00	s	ELECT 33uF 20% 25V
C320	1-124-589-11	s	ELECT 47uF 20% 16V
C321	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C322	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C323	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C324	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C325	1-130-495-00	s	MYLAR 0.1uF 5% 50V
C326	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C327	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C328	1-126-993-11	s	ELECT 100uF 20% 16V
C329	1-163-017-00	s	CERAMIC, CHIP 4700pF 10% 50V
C330	1-126-934-11	s	ELECT 220uF 20% 16V
C331	1-130-495-00	s	MYLAR 0.1uF 5% 50V
C332	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C333	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C334	1-126-993-11	s	ELECT 100uF 20% 16V
C335	1-163-017-00	s	CERAMIC, CHIP 4700pF 10% 50V
C336	1-126-934-11	s	ELECT 220uF 20% 16V
C337	1-126-768-11	s	ELECT 2200uF 20% 16V
C338	1-124-589-11	s	ELECT 47uF 20% 16V
C339	1-124-465-00	s	ELECT 0.47uF 20% 50V
C340	1-124-465-00	s	ELECT 0.47uF 20% 50V
C341	1-163-104-00	s	CERAMIC, CHIP 30pF 5% 50V
C342	1-163-104-00	s	CERAMIC, CHIP 30pF 5% 50V
C343	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C344	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C345	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C346	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C347	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C348	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C349	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C351	1-124-465-00	s	ELECT 0.47uF 20% 50V
C352	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C353	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C354	1-126-160-11	s	ELECT 1uF 20% 50V
C355	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C363	1-126-993-11	s	ELECT 100uF 20% 16V
C364	1-126-993-11	s	ELECT 100uF 20% 16V
C365	1-126-993-11	s	ELECT 100uF 20% 16V
C366	1-126-993-11	s	ELECT 100uF 20% 16V
C367	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C515	1-130-471-00	s	MYLAR 1000pF 5% 50V
C516	1-130-471-00	s	MYLAR 1000pF 5% 50V
C518	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C519	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C520	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C521	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C522	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C523	1-124-589-11	s	ELECT 47uF 20% 16V
C524	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C525	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C526	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

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Ref. No. or Q'ty	Part No.	SP	Description
C527	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C528	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C529	1-126-993-11	s	ELECT 100uF 20% 16V
C530	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C536	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C539	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C540	1-124-589-11	s	ELECT 47uF 20% 16V
C545	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C546	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C547	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C548	1-126-516-11	s	ELECT 120uF 20% 16V
C601	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C602	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C603	1-126-160-11	s	ELECT 1uF 20% 50V
C604	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C605	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C606	1-126-993-11	s	ELECT 100uF 20% 16V
C607	1-126-163-11	s	ELECT 4.7uF 20% 50V
C670	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
CN100 W	1-560-899-00	o	CONNECTOR, 11P, MALE
CN101 W	1-563-461-11	o	CONNECTOR, FPC 28P, FEMALE
CN102 Y	1-506-473-11	o	CONNECTOR, 8P, MALE
CN103 B	1-506-470-11	s	CONNECTOR, 5P, MALE
CN105 W	------------	-	HARNESS (CASSECON)
CN106 W	------------	-	HARNESS (LD MOTOR)
CN107 W	1-506-468-11	s	CONNECTOR, 3P, MALE
CN108 W	1-506-467-11	s	CONNECTOR, 2P, MALE
CN110 R	1-506-477-11	s	CONNECTOR, 12P, MALE
CN111 R	1-506-474-11	s	CONNECTOR, 9P, MALE
CN114 W	1-506-476-11	s	CONNECTOR, 11P, MALE
CN116 Y	1-506-478-11	s	CONNECTOR, 13P, MALE
CN117 B	1-506-469-11	s	CONNECTOR, 4P, MALE
CN118 R	1-506-468-11	s	CONNECTOR, 3P, MALE
CN123 W	1-506-474-11	s	CONNECTOR, 9P, MALE
CN124 W	------------	-	HARNESS (T-REEL)
CN130 B	1-506-471-11	s	CONNECTOR, 6P, MALE
CN131 B	1-506-475-11	s	CONNECTOR, 10P, MALE
CN132 R	1-506-471-11	s	CONNECTOR, 6P, MALE
CN133 B	1-506-468-11	s	CONNECTOR, 3P, MALE
CN134 W	1-562-883-11	o	CONNECTOR, FPC 20P, FEMALE
CN140 W	------------	-	HARNESS (AU CONT)
CN142 W	------------	-	HARNESS (AU REG)
CN810	1-691-271-11	s	CONNECTOR, 10P, MALE
CN811	1-691-271-11	s	CONNECTOR, 10P, MALE
D101	8-719-911-19	s	DIODE 1SS119
D102	8-719-104-34	s	DIODE 1S2836
D104	8-719-200-02	s	DIODE 10E-2
D105	8-719-200-02	s	DIODE 10E-2
D108	8-719-938-75	s	DIODE SB05-05CP
*a	8-719-031-57	s	DIODE SB05-05NP
D112	8-719-109-68	s	DIODE RD3.6ES-B1
D113	8-719-104-34	s	DIODE 1S2836
D116	8-719-109-84	s	DIODE RD5.1ES-B1
D119	8-719-911-19	s	DIODE 1SS119
D120A	8-719-911-19	s	DIODE 1SS119
*a	Not in use.		
D301	8-719-800-76	s	DIODE 1SS226
D302	8-719-911-19	s	DIODE 1SS119
D303	8-719-106-16	s	DIODE RD6.8M-B1

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Ref. No. or Q'ty	Part No.	SP	Description
D308	8-719-400-18	s	DIODE MA152WK
D310	8-719-106-43	s	DIODE RD9.1M-B1
D311	8-719-982-04	s	DIODE ERB81-004
D312	8-719-982-04	s	DIODE ERB81-004
D313	8-719-200-02	s	DIODE 10E-2
D314	8-719-200-02	s	DIODE 10E-2
D315	8-719-400-18	s	DIODE MA152WK
D316	8-719-106-16	s	DIODE RD6.8M-B1
D317	8-719-160-68	s	DIODE RD18FB2
D318	8-719-160-68	s	DIODE RD18FB2
D319	8-719-400-18	s	DIODE MA152WK
D320	8-719-911-19	s	DIODE 1SS119
D321	8-719-800-76	s	DIODE 1SS226
D326	8-719-110-16	s	DIODE RD10ES-B1
D327	8-719-200-02	s	DIODE 10E-2
D328	8-719-200-02	s	DIODE 10E-2
D329	8-719-200-02	s	DIODE 10E-2
D505	8-719-104-34	s	DIODE 1S2836
D506	8-719-104-34	s	DIODE 1S2836
D508	8-719-104-34	s	DIODE 1S2836
D509	8-719-104-34	s	DIODE 1S2836
IC101	8-752-840-67	s	IC CXP80624-436Q
IC102	8-759-720-81	s	IC M6M80011AP
IC103	8-759-745-60	s	IC NJM4560D
IC104	8-759-512-71	s	IC S-8054HNM
IC106	8-759-745-60	s	IC NJM4560D
IC107	8-759-729-03	s	IC NJM2903D
IC108	8-759-135-80	s	IC uPC358C
IC109	8-759-983-45	s	IC BA6238A
IC111	8-759-140-53	s	IC uPD4053BC
IC112	8-759-711-41	s	IC NJM2220S
IC114	8-759-917-43	s	IC SN74HC138AN
IC115	8-759-202-61	s	IC TC4094BP
IC116	8-759-512-71	s	IC S-8054HNM
IC301	8-759-912-77	s	IC LM324N
IC302	8-759-912-77	s	IC LM324N
IC303	8-759-140-53	s	IC uPD4053BC
IC304	8-759-984-03	s	IC LM339N
IC305	8-759-729-03	s	IC NJM2903D
IC306	8-759-091-41	s	IC uPD75108CW-W27
IC309	8-759-729-03	s	IC NJM2903D
IC310	8-759-135-80	s	IC uPC358C
IC311	8-759-912-77	s	IC LM324N
IC312	8-759-135-80	s	IC uPC358C
IC314	8-759-140-53	s	IC uPD4053BC
IC315	8-759-140-53	s	IC uPD4053BC
IC503	8-759-708-05	s	IC NJM78L05A
IC504	8-759-916-20	s	IC SN74HC14AN
IC505	8-759-745-60	s	IC NJM4560D
IC506	8-759-040-70	s	IC MC14070BCP
IC508	8-759-340-13	s	IC HD14013BP
IC509	8-759-745-60	s	IC NJM4560D
IC510	8-759-140-53	s	IC uPD4053BC
IC512	8-759-140-53	s	IC uPD4053BC
IC513	8-759-729-03	s	IC NJM2903D
IC514	8-759-745-60	s	IC NJM4560D
IC601	8-759-729-03	s	IC NJM2903D

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

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Ref. No. or Q'ty	Part No.	SP	Description
L101	1-410-482-31	s	INDUCTOR 100uH
L301	1-408-519-00	s	COIL, CHOKE 420uH
L302	1-408-519-00	s	COIL, CHOKE 420uH
PS101	⚠1-532-685-00	s	LINK, IC 0.8A
PS105	⚠1-532-637-00	s	LINK, IC 1.0A
PS301	⚠1-532-685-00	s	LINK, IC 0.8A
Q101	8-729-924-90	s	TRANSISTOR 2SB1370-EF
Q102	8-729-901-01	s	TRANSISTOR DTC144EK
Q103	8-729-901-06	s	TRANSISTOR DTA144EK
Q104	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q107	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q108	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q109	8-729-119-77	s	TRANSISTOR 2SA1175-FEK
Q110	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q114	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q115	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q116	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q117	8-729-901-00	s	TRANSISTOR DTC124EK
Q118	8-729-901-00	s	TRANSISTOR DTC124EK
Q119	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q120	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q121	8-729-901-01	s	TRANSISTOR DTC144EK
Q128	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q129	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q130	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q131	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q134	8-729-901-01	s	TRANSISTOR DTC144EK
Q301	8-729-901-01	s	TRANSISTOR DTC144EK
Q302	8-729-901-01	s	TRANSISTOR DTC144EK
Q303	8-729-901-01	s	TRANSISTOR DTC144EK
Q304	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q305	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q306	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q307	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q308	8-729-804-87	s	TRANSISTOR 2SB1142-T
Q309	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q310	8-729-804-87	s	TRANSISTOR 2SB1142-T
Q311	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q312	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q313	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q314	8-729-320-60	s	TRANSISTOR 2SD788-34
Q315	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q316	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q317	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q318	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q319	8-729-320-60	s	TRANSISTOR 2SD788-34
Q320	8-729-901-01	s	TRANSISTOR DTC144EK
Q321	8-729-901-01	s	TRANSISTOR DTC144EK
Q322	8-729-901-01	s	TRANSISTOR DTC144EK
Q323	8-729-202-38	s	TRANSISTOR 2SC3326N
Q331	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q332	8-729-901-01	s	TRANSISTOR DTC144EK
Q333	8-729-901-01	s	TRANSISTOR DTC144EK
Q334	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q335	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q336	8-729-901-01	s	TRANSISTOR DTC144EK
Q337	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q338	8-729-320-60	s	TRANSISTOR 2SD788-34

(SS-49A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q340	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q341	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q342	8-729-320-60	s	TRANSISTOR 2SD788-34
Q346	8-729-889-40	s	TRANSISTOR 2SD894
Q347	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q348	8-729-811-11	s	TRANSISTOR 2SD1111
Q349	8-729-901-06	s	TRANSISTOR DTA144EK
Q350	8-729-901-01	s	TRANSISTOR DTC144EK
Q351	8-729-901-01	s	TRANSISTOR DTC144EK
Q352	8-729-900-52	s	TRANSISTOR DTC114YK
Q506	8-729-105-73	s	TRANSISTOR 2SK523-L2
Q507	8-729-901-01	s	TRANSISTOR DTC144EK
Q510	8-729-901-01	s	TRANSISTOR DTC144EK
Q516	8-729-901-01	s	TRANSISTOR DTC144EK
R101	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R102	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R103	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R104	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R105	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R106	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R107	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R108	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R109	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R110	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R111	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R112	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R114	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R115	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R116	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R119	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R120	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R121	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R123	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R124	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R125	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R126	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R127	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R128	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R129	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R130	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R131	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R132	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R133	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R134	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R135	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R136	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R137	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R138	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R139	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R140	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R141	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R142	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R143	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R144	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R145	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R146	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R147	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R148	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R149	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(SS-49A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R150	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R151	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R152	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R153	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R154	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R155	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R156	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R157	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R158	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R159	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R160	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R161	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R162	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R163	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R164	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R165	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R166	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R167	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R168	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R169	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R170	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R171	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R172	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R173	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R174	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R175	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R176	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R177	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R178	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R179	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R180	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R181	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R182	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R183	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R184	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R185	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R186	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R187	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R188	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R194	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R195	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R196	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R197	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R198	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R199	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R200	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R201	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R202	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R203	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R204	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R205	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R206	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R207	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R208	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R209	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R210	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R211	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R212	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R213	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W

(SS-49A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R214	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R215	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R217	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R218	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R219	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R220	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R221	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R222	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R223	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R224	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R226	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R227	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R228	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R229	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R230	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R231	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R232	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R233	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R234	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R235	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R236	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R237	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R238	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R239	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R240	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R241	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R242	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R243	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R245	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R247	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R250	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R255	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R268	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R269	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R270	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R271	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R272	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R273	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R274	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R275	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R276	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R277	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R278	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R280	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R281	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R282	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R283	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R284	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R285	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R289	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R290	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R291	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R292	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R293	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R299	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R301	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R302	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R303	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R304	1-216-045-00	s	METAL, CHIP 680 5% 1/10W

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(SS-49A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R305	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R306	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R307	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R309	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R310	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R311	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R312	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R313	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R314	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R315	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R316	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R317	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R318	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R319	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R320	1-216-031-00	s	METAL, CHIP 180 5% 1/10W
R321	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R322	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R324	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R325	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R326	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R328	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R329	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R330	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R332	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R333	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R334	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R336	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R337	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R338	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R340	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R341	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R345	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R346	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R349	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R350	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R351	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R352	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R353	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R354	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R355	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R356	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R357	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R358	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R359	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R360	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R361	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R362	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R363	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R364	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R366	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R367	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R368	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R370	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R371	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R372	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R373	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R375	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R376	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R377	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W

(SS-49A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R378	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R379	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R380	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R381	⚠1-216-365-00	s	METAL 0.47 5% 2W
R383	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R384	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R385	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R387	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R388	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R389	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R390	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R392	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R393	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R394	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R395	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R396	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R397	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R398	⚠1-216-365-00	s	METAL 0.47 5% 2W
R399	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R400	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R401	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R402	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R403	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R404	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R405	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R406	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R407	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R408	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R409	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R410	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R411	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R412	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R413	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R414	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R415	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R416	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R417	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R418	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R419	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R420	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R421	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R422	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R423	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R424	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R425	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R426	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R427	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R428	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R429	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R430	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R431	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R432	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R433	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R434	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R435	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R436	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R437	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R438	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R439	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W

NOTES: *a; S/N 10001 thru 10030
*b; S/N 10001 thru 10130
*c; S/N 10001 thru 10280
*d; S/N 10001 thru 10480
*e; S/N 10131 thru 10280

(SS-49A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R440	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R441	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R442	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R443	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R444	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R445	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R446	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R447	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R448	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R449	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R450	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R451	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R452	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R453	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R454	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R455	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R456	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R457	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R458	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R459	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R460	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R461	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R462	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R463	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R464	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R465	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R466	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R467	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R468	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R469	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R470	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R471	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R472	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R473	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R474	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R475	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R476	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R477	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R478	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R479	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R480	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R481	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R482	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R483	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R485	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R486	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R487	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R488	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R489	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R490	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R491	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R492	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R493	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R494	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R495	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R496	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R497	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R498	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R499	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W

(SS-49A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R531	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R532	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R533	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R535	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
*a	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R536	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
*a	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R537	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R538	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R539	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
*a	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R540	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R541	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R542	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R543	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R544	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R546	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R548	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R549	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
*a	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R550	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R551	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R552	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R553	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R554	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R555	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R556	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R557	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R558	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R559	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R560	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R561	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R562	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R563	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R568	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
*a	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R569	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
*a	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R570	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R571	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R572	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R573	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R574	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R575	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R576	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R577	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R578	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R600	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R601	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R602	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R603	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R604	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R605	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R606	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R607	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R609	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R610	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R616	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R617	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W

NOTES: *a; S/N 10001 thru 10030
*b; S/N 10001 thru 10130
*c; S/N 10001 thru 10280
*d; S/N 10001 thru 10480
*e; S/N 10131 thru 10280

(SS-49A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R618	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R632	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R633	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R634	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R635	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R636	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R637	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R638	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R640	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R641	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R642	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R643	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R644	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R646	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R647	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R648	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R650	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R651	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R652	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
RB101	1-235-196-00	s	RES BLOCK 100K x8
RB301	1-235-195-00	s	RES BLOCK 10K x8
RV101	1-238-020-11	s	RES, ADJ, CARBON 100K
RV102	1-228-477-00	s	RES, ADJ, METAL 100K
RV301	1-241-136-11	s	RES, ADJ, CARBON 10K
RV302	1-241-136-11	s	RES, ADJ, CARBON 10K
RV303	1-241-119-11	s	RES, ADJ, CARBON 1K
RV304	1-241-119-11	s	RES, ADJ, CARBON 1K
RV305	1-241-136-11	s	RES, ADJ, CARBON 10K
RV500	1-241-136-11	s	RES, ADJ, CARBON 10K
RV502	1-241-136-11	s	RES, ADJ, CARBON 10K
RV503	1-241-136-11	s	RES, ADJ, CARBON 10K
S101	1-570-623-11	s	SWITCH, DIP 8-CKT
X101	1-567-962-11	s	CRYSTAL 8.00MHz
X301	1-567-192-11	s	RESONATOR, CERAMIC 4.00MHz

VM-12P BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-317-A	o	MOUNTED CIRCUIT BOARD, VM-12P
1pc	X-3166-759-1	o	SHIELD (B) ASS'Y, VM BOARD
1pc	3-173-466-01	o	SHEET, INSULATING, VM BOARD
1pc	3-173-489-01	o	SHIELD (A), VM BOARD
1pc	3-177-646-01	o	SHIELD (C), VM BOARD
C10	1-124-584-00	s	ELECT 100uF 20% 10V
C13	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C16	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C17	1-124-589-11	s	ELECT 47uF 20% 16V
C30	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C31	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C34	1-163-110-00	s	CERAMIC, CHIP 51pF 5% 50V
C35	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C37	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C38	1-124-589-11	s	ELECT 47uF 20% 16V
C39	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C50	1-124-584-00	s	ELECT 100uF 20% 10V
C51	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C52	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C53	1-124-589-11	s	ELECT 47uF 20% 16V
C54	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C100	1-131-350-00	s	TANTALUM 3.3uF 10% 35V
C101	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
*a	Not in use.		
C102	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C103	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C104	1-124-584-00	s	ELECT 100uF 20% 10V
C105	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C106	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C107	1-124-584-00	s	ELECT 100uF 20% 10V
C108	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C109	1-163-079-00	s	CERAMIC, CHIP 0.039uF 10% 25V
*d	1-162-637-11	s	CERAMIC, CHIP 0.47uF 16V
C110	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C120	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C121	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C122	1-124-584-00	s	ELECT 100uF 20% 10V
C123	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C124	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C125	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C126	1-124-584-00	s	ELECT 100uF 20% 10V
C127	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C128	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C130	1-131-345-00	s	TANTALUM 0.47uF 10% 35V
C140	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C141	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C142	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C143	1-163-105-00	s	CERAMIC, CHIP 33pF 5% 50V
C144	1-163-105-00	s	CERAMIC, CHIP 33pF 5% 50V
C145	1-126-301-11	s	ELECT 1uF 20% 50V
C190	1-124-638-11	s	ELECT 22uF 20% 10V
C191	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C192	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C193	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C194	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C195	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C200	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C201	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C202	1-126-301-11	s	ELECT 1uF 20% 50V

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(VM-12P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C203	1-124-589-11	s	ELECT 47uF 20% 16V
C220	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
*i	1-163-105-00	s	CERAMIC, CHIP 33pF 5% 50V
*b	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C230	1-126-157-11	s	ELECT 10uF 20% 16V
C231	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
*b	Change 3300pF -> 0.01uF.		
C232	1-126-162-11	s	ELECT 3.3uF 20% 50V
C234	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
*c	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C235	1-163-014-00	s	CERAMIC, CHIP 2700pF 5% 50V
*c	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C236	1-163-098-00	s	CERAMIC, CHIP 16pF 5% 50V
C237	1-131-350-00	s	TANTALUM 3.3uF 10% 35V
*a	1-124-584-00	s	ELECT 100uF 20% 10V
C250	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C251	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C252	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C253	1-164-161-11	s	CERAMIC, CHIP 2200pF 10% 100V
C254	1-124-589-11	s	ELECT 47uF 20% 16V
C255	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C256	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C257	1-131-347-00	s	TANTALUM 1uF 10% 35V
C258	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C270	1-124-589-11	s	ELECT 47uF 20% 16V
C271	1-163-127-00	s	CERAMIC, CHIP 270pF 5% 50V
C272	1-163-139-00	s	CERAMIC, CHIP 820pF 5% 50V
C290	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C291	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C292	1-124-584-00	s	ELECT 100uF 20% 10V
C293	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C300	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C301	1-124-589-11	s	ELECT 47uF 20% 16V
C302	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C303	1-124-589-11	s	ELECT 47uF 20% 16V
C304	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C305	1-124-589-11	s	ELECT 47uF 20% 16V
C306	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C307	1-124-589-11	s	ELECT 47uF 20% 16V
C308	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C309	1-124-589-11	s	ELECT 47uF 20% 16V
C310	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C311	1-124-589-11	s	ELECT 47uF 20% 16V
C312	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C313	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C314	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C315	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C316	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C317	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C350	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C351	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C400	1-124-584-00	s	ELECT 100uF 20% 10V
C401	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C488	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C489	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C490	1-124-589-11	s	ELECT 47uF 20% 16V
C491	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C492	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C493	1-124-584-00	s	ELECT 100uF 20% 10V
C494	1-124-584-00	s	ELECT 100uF 20% 10V
C495	1-124-584-00	s	ELECT 100uF 20% 10V
C496	1-124-584-00	s	ELECT 100uF 20% 10V
C497	1-124-584-00	s	ELECT 100uF 20% 10V
C498	1-124-584-00	s	ELECT 100uF 20% 10V
C499	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C551	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
*b	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C552	1-163-105-00	s	CERAMIC, CHIP 33pF 5% 50V
*b	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C555	1-163-105-00	s	CERAMIC, CHIP 33pF 5% 50V
*b	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C590	1-124-589-11	s	ELECT 47uF 20% 16V
C591	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C592	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C593	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C594	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C595	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C610	1-131-344-00	s	TANTALUM 0.33uF 10% 35V
C611	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C620	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V
C621	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C622	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C623	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C624	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C665	1-124-589-11	s	ELECT 47uF 20% 16V
C710	1-163-023-00	s	CERAMIC, CHIP 0.015uF 10% 50V
C711	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C712	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C713	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C720	1-131-345-00	s	TANTALUM 0.47uF 10% 35V
C750	1-131-347-00	s	TANTALUM 1uF 10% 35V
C990	1-124-589-11	s	ELECT 47uF 20% 16V
C991	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C992	1-126-375-11	s	ELECT 100uF 20% 25V
C993	1-126-162-11	s	ELECT 3.3uF 20% 50V
CN701 Y	1-564-019-41	o	CONNECTOR, 9P, MALE
CN702 Y	1-506-470-11	s	CONNECTOR, 5P, MALE
CN710 W	1-562-887-11	s	CONNECTOR, FPC 20P, FEMALE
CV140	1-141-227-00	s	CAP, TRIMMER 20pF
CV230	1-141-227-00	s	CAP, TRIMMER 20pF
CV550	1-141-260-00	s	CAP, TRIMMER 50pF
*b	1-141-227-00	s	CAP, TRIMMER 20pF
CV620	1-141-227-00	s	CAP, TRIMMER 20pF
D140	8-719-949-46	s	DIODE 1T32
D230	8-713-300-88	s	DIODE 1T33C-01
D250	8-719-104-34	s	DIODE 1S2836
D400	8-719-104-34	s	DIODE 1S2836
D401	8-719-104-34	s	DIODE 1S2836
D510	8-719-104-34	s	DIODE 1S2836
D511	8-719-104-34	s	DIODE 1S2836
D512	8-719-104-34	s	DIODE 1S2836
D620	8-713-300-88	s	DIODE 1T33C-01
D710	8-719-104-34	s	DIODE 1S2836
D720	8-719-104-34	s	DIODE 1S2836
FB1A	1-410-858-21	o	BEADS, FERRITE
FB2A	1-410-858-21	o	BEADS, FERRITE

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(VM-12P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
FB3A	1-410-858-21	o	BEADS, FERRITE
FL10	1-235-759-11	s	FILTER, LOW-PASS
FL30	1-235-181-00	s	FILTER, BANDPASS 4.43MHz
IC100	8-752-334-55	s	IC CXD1175AM
IC120	8-752-334-55	s	IC CXD1175AM
IC130	8-759-239-23	s	IC TC74HC86AF
IC131	8-759-925-76	s	IC SN74HC08ANS
IC160	8-759-987-17	s	IC CXD1226Q
IC161	8-759-925-85	s	IC SN74HC32ANS
IC200	8-759-987-20	s	IC CXD1229Q
IC250	8-759-009-51	s	IC MC14538BF
IC251	8-759-925-90	s	IC SN74HC74ANS
IC252	8-759-009-51	s	IC MC14538BF
IC253	8-759-925-90	s	IC SN74HC74ANS
IC254	8-759-927-46	s	IC SN74HC00ANS
IC255	8-759-926-23	s	IC SN74HC163ANS
IC256	8-759-927-46	s	IC SN74HC00ANS
IC257	8-759-300-71	s	IC HD14053BFP
IC300	8-752-340-75	s	IC CXK1206AM
IC301	8-752-340-75	s	IC CXK1206AM
IC302	8-752-340-75	s	IC CXK1206AM
IC303	8-752-340-75	s	IC CXK1206AM
IC304	8-752-340-75	s	IC CXK1206AM
IC305	8-752-340-75	s	IC CXK1206AM
IC350	8-759-927-46	s	IC SN74HC00ANS
IC351	8-759-926-29	s	IC SN74HC175ANS
IC352	8-759-009-51	s	IC MC14538BF
IC353	8-759-925-90	s	IC SN74HC74ANS
IC354	8-759-925-90	s	IC SN74HC74ANS
IC400	8-759-987-18	s	IC CXD1227Q
IC420	8-752-032-96	s	IC CXA1106M
IC440	8-752-032-96	s	IC CXA1106M
IC500	8-759-987-19	s	IC CXD1228Q
IC600	8-759-925-90	s	IC SN74HC74ANS
IC601	8-759-926-23	s	IC SN74HC163ANS
IC602	8-759-926-23	s	IC SN74HC163ANS
IC603	8-759-926-23	s	IC SN74HC163ANS
IC604	8-759-925-74	s	IC SN74HC04ANS
IC710	8-759-239-55	s	IC TC74HC123AF
IC711	8-759-009-51	s	IC MC14538BF
IC750	8-759-926-56	s	IC SN74HC273ANS
IC751	8-759-925-74	s	IC SN74HC04ANS
IC752	8-759-927-46	s	IC SN74HC00ANS
IC753	8-759-925-76	s	IC SN74HC08ANS
IC754	8-759-925-90	s	IC SN74HC74ANS
IC990	8-759-521-23	s	IC PQ05RF2V
L10	1-408-408-00	s	INDUCTOR 8.2uH
L12	1-410-482-31	s	INDUCTOR 100uH
L30	1-408-408-00	s	INDUCTOR 8.2uH
L31	1-410-482-31	s	INDUCTOR 100uH
L50	1-410-482-31	s	INDUCTOR 100uH
L100	1-410-482-31	s	INDUCTOR 100uH
L120	1-410-482-31	s	INDUCTOR 100uH
L140	1-410-460-11	s	INDUCTOR 1.5uH
L190	1-410-478-11	s	INDUCTOR 47uH
L230	1-410-466-41	s	INDUCTOR 4.7uH
L250	1-410-482-31	s	INDUCTOR 100uH

(VM-12P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
L270	1-408-423-00	s	INDUCTOR 150uH
L290	1-410-482-31	s	INDUCTOR 100uH
L300	1-410-478-11	s	INDUCTOR 47uH
L301	1-410-478-11	s	INDUCTOR 47uH
L302	1-410-478-11	s	INDUCTOR 47uH
L303	1-410-478-11	s	INDUCTOR 47uH
L304	1-410-478-11	s	INDUCTOR 47uH
L305	1-410-478-11	s	INDUCTOR 47uH
L490	1-410-478-11	s	INDUCTOR 47uH
L491	1-408-425-00	s	INDUCTOR 220uH
L492	1-408-425-00	s	INDUCTOR 220uH
L590	1-410-478-11	s	INDUCTOR 47uH
Q10	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q12	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q20	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q21	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q30	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q31	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q32	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q33	8-729-202-38	s	TRANSISTOR 2SC3326N
Q50	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q51	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q100	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q120	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q140	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q141	8-729-122-63	s	TRANSISTOR 2SA1226
Q200	8-729-202-38	s	TRANSISTOR 2SC3326N
Q210	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q214	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q270	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q271	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q550	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q551	8-729-122-63	s	TRANSISTOR 2SA1226
Q620	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q621	8-729-140-47	s	TRANSISTOR 2SC3735-L-B35
Q720	8-729-901-01	s	TRANSISTOR DTC144EK
R10	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R11	Deleted.		
*d	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R11A	1-215-423-00	s	METAL 1.2K 1% 1/4W
*d	Not in use.		
R12	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R13	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R14	1-216-039-00	s	METAL, CHIP 390 5% 1/10W
R15	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R19	1-216-295-00	s	METAL, CHIP 0
R20	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R21	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R23A	1-249-432-11	s	CARBON 18K 5% 1/4W
*d	Not in use.		
R24A	1-249-429-11	s	CARBON 10K 5% 1/4W
*d	Not in use.		
R30	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R31	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R32	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R33	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R34	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R35	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(VM-12P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R36	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R37	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R38	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R39	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R40	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R41	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R42	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R50	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R51	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R52	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R53	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R54	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R55	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R100	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R101	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R102	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R103	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R104	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R105	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
*d	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R106	1-216-119-00	s	METAL, CHIP 820K 5% 1/10W
R107	1-216-111-00	s	METAL, CHIP 390K 5% 1/10W
R108	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R109	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R110A	1-215-473-00	s	METAL 150K 1% 1/4W
*d	Not in use.		
R120	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R121	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R122	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R123	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R124	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R125	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R126	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R130	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R131	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W
R132	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R140	1-216-119-00	s	METAL, CHIP 820K 5% 1/10W
R141	1-216-111-00	s	METAL, CHIP 390K 5% 1/10W
R142	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R143	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R144	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R145	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R146	1-216-011-00	s	METAL, CHIP 27 5% 1/10W
R147	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R148	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R149	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R150	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R151	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R153	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R154	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R161	1-216-295-00	s	METAL, CHIP 0
R162	1-216-295-00	s	METAL, CHIP 0
R165	1-216-295-00	s	METAL, CHIP 0
R166A	1-249-417-11	s	CARBON 1K 5% 1/4W
*c	Not in use.		
R200	1-216-117-00	s	METAL, CHIP 680K 5% 1/10W
R201	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R202	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R203	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W

(VM-12P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R204	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R205	1-216-019-00	s	METAL, CHIP 56 5% 1/10W
R206	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R220	1-216-681-11	s	METAL, CHIP 18K 0.5% 1/10W
*e	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
*b	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R230	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R231	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R232	Deleted.		
*c	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R233	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R234	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
*d	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R235	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R236	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R237	1-216-117-00	s	METAL, CHIP 680K 5% 1/10W
*a	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R238	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R240	1-216-295-00	s	METAL, CHIP 0
R250	1-216-691-11	s	METAL, CHIP 47K 0.5% 1/10W
R251	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R253	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R255	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R256	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R259	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R260	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R270	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R271	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R272	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R273	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R274	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R275	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R351	1-216-295-00	s	METAL, CHIP 0
R353	1-216-295-00	s	METAL, CHIP 0
R355	1-216-295-00	s	METAL, CHIP 0
R356	1-216-691-11	s	METAL, CHIP 47K 0.5% 1/10W
R357	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R358	1-216-295-00	s	METAL, CHIP 0
R361	1-216-295-00	s	METAL, CHIP 0
R400	1-216-295-00	s	METAL, CHIP 0
R403	1-216-295-00	s	METAL, CHIP 0
R404	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R405	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R406	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R407	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
*a	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R408	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R409	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
*a	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R410	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R411	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R412	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R413	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R414	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R415	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R416	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R501	1-216-295-00	s	METAL, CHIP 0
R503	1-216-295-00	s	METAL, CHIP 0
R505	1-216-295-00	s	METAL, CHIP 0

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(VM-12P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R510	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R511	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R512	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R513	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R514	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R515	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R516	1-216-295-00	s	METAL, CHIP 0
R517	1-216-295-00	s	METAL, CHIP 0
R518	1-216-295-00	s	METAL, CHIP 0
R519	1-216-295-00	s	METAL, CHIP 0
R520	1-216-295-00	s	METAL, CHIP 0
R521	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R522	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R523	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R550	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R551	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R552	1-216-011-00	s	METAL, CHIP 27 5% 1/10W
R556	1-216-295-00	s	METAL, CHIP 0
R557	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R558	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R559	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R605	1-216-295-00	s	METAL, CHIP 0
R610	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R611	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R620	1-216-658-11	s	METAL, CHIP 2K 0.5% 1/10W
R621	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R622	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R623	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W
R624	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R625	1-216-638-11	s	METAL, CHIP 300 0.5% 1/10W
R626	1-216-692-11	s	METAL, CHIP 51K 0.5% 1/10W
R627	1-216-648-11	s	METAL, CHIP 750 0.5% 1/10W
R672	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R700	1-216-295-00	s	METAL, CHIP 0
R703	1-216-295-00	s	METAL, CHIP 0
R705	1-216-295-00	s	METAL, CHIP 0
R707	1-216-295-00	s	METAL, CHIP 0
R708	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R709	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R710	1-216-101-00	s	METAL, CHIP 150K 5% 1/10W
R711	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R712	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R713	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R720	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W
R721	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R722	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R723	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R750	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R751	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R752	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R990	1-216-063-00	s	METAL, CHIP 3.9K 5% 1/10W
R991	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
X301	1-579-057-11	s	CRYSTAL 17.734475MHz
X550	1-577-704-11	s	CRYSTAL 14.21875MHz
X620	1-579-057-11	s	CRYSTAL 17.734475MHz

VO-37A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-318-A	o	MOUNTED CIRCUIT BOARD, VO-37A
1pc	3-168-157-01	o	BRACKET (R), VO BOARD
1pc	3-168-158-01	o	BRACKET (L), VO BOARD
1pc	3-173-464-01	o	SHIELD (A), VO BOARD
1pc	3-173-465-01	o	SHIELD (B), VO BOARD
1pc	3-659-918-01	o	HEAT SINK, IC (for IC1)
3pcs	3-703-353-08	o	SUPPORTER, PC BOARD
1pc	7-682-547-04	s	SCREW +B 3x6 (for IC1)
2pcs	7-682-903-11	s	SCREW +PWH 3x6
C1	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C2	1-126-516-11	s	ELECT 120uF 20% 16V
C3	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C4	1-126-516-11	s	ELECT 120uF 20% 16V
C5	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C6	1-124-589-11	s	ELECT 47uF 20% 16V
C30	1-124-584-00	s	ELECT 100uF 20% 10V
C31	1-124-584-00	s	ELECT 100uF 20% 10V
C101	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
*b	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C102	1-163-135-00	s	CERAMIC, CHIP 560pF 5% 50V
C103	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C104	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C105	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C106	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C107	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C108	1-124-638-11	s	ELECT 22uF 20% 10V
C109	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C110	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C111	1-124-257-00	s	ELECT 2.2uF 20% 50V
C112	1-126-163-11	s	ELECT 4.7uF 20% 50V
C113	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C114	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C115	1-124-442-00	s	ELECT 330uF 20% 6.3V
C116	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C117	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C118	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C119	1-124-589-11	s	ELECT 47uF 20% 16V
C120	1-124-257-00	s	ELECT 2.2uF 20% 50V
C121	1-124-589-11	s	ELECT 47uF 20% 16V
C122	1-126-163-11	s	ELECT 4.7uF 20% 50V
C123	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C125	1-163-136-00	s	CERAMIC, CHIP 620pF 5% 50V
C126	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C127	1-124-257-00	s	ELECT 2.2uF 20% 50V
C128	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C129	1-163-131-00	s	CERAMIC, CHIP 390pF 5% 50V
C130	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C131	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C132	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C133	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C134	1-163-139-00	s	CERAMIC, CHIP 820pF 5% 50V
C135A	1-124-465-00	s	ELECT 0.47uF 20% 50V
*b	Not in use.		
C136	1-124-589-11	s	ELECT 47uF 20% 16V
C137	1-124-589-11	s	ELECT 47uF 20% 16V
C141	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C142	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C143	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C145	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

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Ref. No. or Q'ty	Part No.	SP	Description
C146	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C147	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C148	1-124-589-11	s	ELECT 47uF 20% 16V
C149	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C150	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C151	1-124-589-11	s	ELECT 47uF 20% 16V
C152	1-163-257-11	s	CERAMIC, CHIP 180pF 5% 50V
C153	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C154	1-124-589-11	s	ELECT 47uF 20% 16V
C155	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
	*b Not in use.		
C156	1-163-257-11	s	CERAMIC, CHIP 180pF 5% 50V
C157	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C158	1-163-108-00	s	CERAMIC, CHIP 43pF 5% 50V
C160	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C161	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C162	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C163	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C164	1-163-091-00	s	CERAMIC, CHIP 8pF 50V
C165	1-163-099-00	s	CERAMIC, CHIP 18pF 5% 50V
C167	1-163-113-00	s	CERAMIC, CHIP 68pF 5% 50V
C170	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C172	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C173	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C174	1-124-589-11	s	ELECT 47uF 20% 16V
C175	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C180	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C181	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C182	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C201	1-124-589-11	s	ELECT 47uF 20% 16V
C202	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C203	1-124-589-11	s	ELECT 47uF 20% 16V
C204	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C205	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C208	1-163-127-00	s	CERAMIC, CHIP 270pF 5% 50V
C209	1-163-112-00	s	CERAMIC, CHIP 62pF 5% 50V
C211	1-164-491-11	s	CERAMIC, CHIP 300pF 1% 50V
C213	1-124-589-11	s	ELECT 47uF 20% 16V
C214	1-126-163-11	s	ELECT 4.7uF 20% 50V
C215	1-126-163-11	s	ELECT 4.7uF 20% 50V
C216	1-124-589-11	s	ELECT 47uF 20% 16V
C218	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C219	1-124-589-11	s	ELECT 47uF 20% 16V
C220	1-124-589-11	s	ELECT 47uF 20% 16V
C221	1-124-589-11	s	ELECT 47uF 20% 16V
C222	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C223	1-124-589-11	s	ELECT 47uF 20% 16V
C224	1-124-589-11	s	ELECT 47uF 20% 16V
C226	1-124-589-11	s	ELECT 47uF 20% 16V
C227	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C228	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C230	1-124-589-11	s	ELECT 47uF 20% 16V
C231	1-126-163-11	s	ELECT 4.7uF 20% 50V
C232	1-163-115-00	s	CERAMIC, CHIP 82pF 5% 50V
C233	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C234	1-124-589-11	s	ELECT 47uF 20% 16V
C235	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C240	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C242	1-163-257-11	s	CERAMIC, CHIP 180pF 5% 50V

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Ref. No. or Q'ty	Part No.	SP	Description
C243	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C244	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C245	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C246	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C247	1-163-124-00	s	CERAMIC, CHIP 200pF 5% 50V
C249	1-163-113-00	s	CERAMIC, CHIP 68pF 5% 50V
C250	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C251	1-124-589-11	s	ELECT 47uF 20% 16V
C252	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C261	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C262	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C263A	1-162-283-31	s	CERAMIC 120pF 10% 50V
	*b Not in use.		
C302	1-124-589-11	s	ELECT 47uF 20% 16V
C309	1-124-584-00	s	ELECT 100uF 20% 10V
C310	1-124-584-00	s	ELECT 100uF 20% 10V
C311	1-124-589-11	s	ELECT 47uF 20% 16V
C312	1-124-589-11	s	ELECT 47uF 20% 16V
C313	1-124-589-11	s	ELECT 47uF 20% 16V
C314	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C315	1-131-360-00	s	TANTALUM 15uF 10% 25V
	*d 1-131-365-00	s	TANTALUM 10uF 10% 20V
C320	1-124-589-11	s	ELECT 47uF 20% 16V
C321	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C322	1-131-351-00	s	TANTALUM 4.7uF 10% 35V
C323	1-124-589-11	s	ELECT 47uF 20% 16V
C324	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C325	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C326	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C327	1-163-089-00	s	CERAMIC, CHIP 6pF 50V
C330	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C331	1-124-589-11	s	ELECT 47uF 20% 16V
C332	1-126-163-11	s	ELECT 4.7uF 20% 50V
C333	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C334	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C335	1-124-589-11	s	ELECT 47uF 20% 16V
C336	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C337	1-124-589-11	s	ELECT 47uF 20% 16V
C340	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C341	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C342	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C343	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C344	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C345	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C346	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C347	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C348	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C349	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C350	1-124-589-11	s	ELECT 47uF 20% 16V
C351	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C352	1-124-584-00	s	ELECT 100uF 20% 10V
	*d 1-124-589-11	s	ELECT 47uF 20% 16V
C353	1-124-584-00	s	ELECT 100uF 20% 10V
	*d 1-124-589-11	s	ELECT 47uF 20% 16V
C354	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C355	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C356	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C357	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C358	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

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Ref. No. or Q'ty	Part No.	SP	Description
C359	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C360	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C361	1-163-089-00	s	CERAMIC, CHIP 6pF 50V
C363	1-124-442-00	s	ELECT 330uF 20% 6.3V
C364	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C365	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V
C366	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C370	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C371	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C380	1-124-584-00	s	ELECT 100uF 20% 10V
C381	1-124-584-00	s	ELECT 100uF 20% 10V
C383	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C384	1-124-589-11	s	ELECT 47uF 20% 16V
C385	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C386	1-124-589-11	s	ELECT 47uF 20% 16V
C390	1-124-589-11	s	ELECT 47uF 20% 16V
C391	1-124-589-11	s	ELECT 47uF 20% 16V
C402	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C407	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C408	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C410	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C411	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C413	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C416	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C417	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C418	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C419	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C420	1-124-584-00	s	ELECT 100uF 20% 10V
C422	1-124-584-00	s	ELECT 100uF 20% 10V
*d	1-124-589-11	s	ELECT 47uF 20% 16V
C423A	1-107-077-00	s	MICA 47pF 5% 50V
*c	Not in use.		
C425	1-124-589-11	s	ELECT 47uF 20% 16V
C426	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C427	1-124-589-11	s	ELECT 47uF 20% 16V
C428	1-124-589-11	s	ELECT 47uF 20% 16V
C429	1-124-589-11	s	ELECT 47uF 20% 16V
C430	1-124-589-11	s	ELECT 47uF 20% 16V
C431	1-164-222-11	s	CERAMIC, CHIP 0.22uF 25V
C432	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C433	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C434	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C435	1-126-157-11	s	ELECT 10uF 20% 16V
C436	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C440	1-126-157-11	s	ELECT 10uF 20% 16V
C441	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C450	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C451	1-163-108-00	s	CERAMIC, CHIP 43pF 5% 50V
C452	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C453	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C454	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C455	1-126-157-11	s	ELECT 10uF 20% 16V
C460	1-124-584-00	s	ELECT 100uF 20% 10V
C461	1-131-377-00	s	TANTALUM 10uF 10% 10V
*d	1-131-349-00	s	TANTALUM 2.2uF 10% 35V
C471	1-124-584-00	s	ELECT 100uF 20% 10V
C472	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C473	1-124-589-11	s	ELECT 47uF 20% 16V
C480	1-124-589-11	s	ELECT 47uF 20% 16V

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Ref. No. or Q'ty	Part No.	SP	Description
C481	1-124-257-00	s	ELECT 2.2uF 20% 50V
C482	1-124-584-00	s	ELECT 100uF 20% 10V
C483	1-124-584-00	s	ELECT 100uF 20% 10V
C488	1-124-584-00	s	ELECT 100uF 20% 10V
C489	1-124-471-00	s	ELECT 1000uF 20% 6.3V
C491	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C492	1-126-925-11	s	ELECT 470uF 20% 10V
*a	Change 47uF -> 470uF.		
C493	1-124-471-00	s	ELECT 1000uF 20% 6.3V
C494	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C495	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C496	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C497	1-126-157-11	s	ELECT 10uF 20% 16V
C498	1-124-584-00	s	ELECT 100uF 20% 10V
C499	1-124-471-00	s	ELECT 1000uF 20% 6.3V
CN201 B	1-506-471-11	s	CONNECTOR, 6P, MALE
CN202 W	------------	-	HARNESS (RP PB)
CN203 B	1-506-475-11	s	CONNECTOR, 10P, MALE
CN206 W	------------	-	HARNESS (RP FSC)
CN207 W	------------	-	HARNESS (RP REC)
CN208 W	------------	-	HARNESS (RP-VO)
CN211 W	1-562-992-11	o	CONNECTOR, FPC 26P, FEMALE
CN221 W	1-506-474-11	s	CONNECTOR, 9P, MALE
CN222 Y	1-506-470-11	s	CONNECTOR, 5P, MALE
CN231 Y	1-506-470-11	s	CONNECTOR, 5P, MALE
CN232 Y	1-506-473-11	s	CONNECTOR, 8P, MALE
D10	8-719-400-18	s	DIODE MA152WK
D101	8-719-400-18	s	DIODE MA152WK
D102A	8-719-104-10	s	DIODE 1SS99
*c	Not in use.		
D103	8-719-400-18	s	DIODE MA152WK
D130A	8-719-911-19	s	DIODE 1SS119
*b	Not in use.		
D201	8-719-400-18	s	DIODE MA152WK
D202	8-719-400-18	s	DIODE MA152WK
D301	8-719-400-18	s	DIODE MA152WK
D401A	8-719-911-19	s	DIODE 1SS119
DL201	1-415-677-11	s	DELAY LINE 370nS
DL301	1-415-559-11	s	DELAY LINE 600nS
FL101	1-236-911-11	s	FILTER, LOW-PASS
FL201	1-236-716-11	s	FILTER, LOW-PASS
FL301	1-239-085-11	s	FILTER, LOW-PASS
FL302	1-239-085-11	s	FILTER, LOW-PASS
IC1	8-759-982-10	s	IC RC7809FA
IC10	8-759-038-46	s	IC SC7S00F
IC101	8-759-420-64	s	IC AN3237FB
IC102	8-759-710-07	s	IC NJM2234M
IC201	8-759-710-07	s	IC NJM2234M
IC202	8-759-051-54	s	IC VC2076MP
IC203	8-759-710-86	s	IC NJM2233BM
IC302	8-759-710-86	s	IC NJM2233BM
IC303	8-752-334-55	s	IC CXD1175AM
IC304	8-752-342-61	s	IC CXD2105AQ
IC306	8-759-710-07	s	IC NJM2234M
IC402	8-759-710-07	s	IC NJM2234M
IC403	8-759-710-07	s	IC NJM2234M
IC404	8-759-710-86	s	IC NJM2233BM

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC405	8-759-710-07	s	IC NJM2234M
IC406	8-759-710-07	s	IC NJM2234M
IC407	8-759-710-07	s	IC NJM2234M
IC440	8-759-925-60	s	IC BA401
IC441	8-759-925-60	s	IC BA401
IC442	8-752-039-13	s	IC CXA1413L
IC491	8-759-057-43	s	IC MC14576BF
IC492	8-759-057-40	s	IC MC14577BF
L1	1-410-482-31	s	INDUCTOR 100uH
L101	1-408-420-00	s	INDUCTOR 82uH
L102	1-410-482-31	s	INDUCTOR 100uH
L103	1-410-482-31	s	INDUCTOR 100uH
L105	1-408-416-00	s	INDUCTOR 39uH
L106	1-408-416-00	s	INDUCTOR 39uH
L108	1-410-473-11	s	INDUCTOR 18uH
L109	1-410-482-31	s	INDUCTOR 100uH
L110	1-410-482-31	s	INDUCTOR 100uH
L111	1-410-478-11	s	INDUCTOR 47uH
L112	1-408-416-00	s	INDUCTOR 39uH
L115	1-408-411-00	s	INDUCTOR 15uH
L116	1-408-411-00	s	INDUCTOR 15uH
L117	1-410-478-11	s	INDUCTOR 47uH
L118	1-410-482-31	s	INDUCTOR 100uH
L120	1-408-416-00	s	INDUCTOR 39uH
L121	1-408-423-00	s	INDUCTOR 150uH
L122A	1-408-413-00	s	INDUCTOR 22uH
*b	Not in use.		
L201	1-410-482-31	s	INDUCTOR 100uH
L202	1-410-482-31	s	INDUCTOR 100uH
L210	1-410-489-11	s	INDUCTOR 390uH
L213	1-408-423-00	s	INDUCTOR 150uH
L215	1-410-482-31	s	INDUCTOR 100uH
L301	1-410-482-31	s	INDUCTOR 100uH
L302	1-410-482-31	s	INDUCTOR 100uH
L310	1-410-482-31	s	INDUCTOR 100uH
L311	1-410-470-11	s	INDUCTOR 10uH
L312	1-410-471-11	s	INDUCTOR 12uH
L320	1-408-420-00	s	INDUCTOR 82uH
L440	1-408-423-00	s	INDUCTOR 150uH
*a	1-410-473-11	s	INDUCTOR 18uH
L441	1-408-414-00	s	INDUCTOR 27uH
L444	1-410-482-31	s	INDUCTOR 100uH
L490	1-410-482-31	s	INDUCTOR 100uH
Q10	8-729-901-06	s	TRANSISTOR DTA144EK
Q11	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q12	8-729-901-01	s	TRANSISTOR DTC144EK
Q13	8-729-901-01	s	TRANSISTOR DTC144EK
Q14	8-729-901-06	s	TRANSISTOR DTA144EK
Q15	8-729-901-01	s	TRANSISTOR DTC144EK
Q16	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q17	8-729-901-06	s	TRANSISTOR DTA144EK
Q19	8-729-901-06	s	TRANSISTOR DTA144EK
Q20	8-729-901-01	s	TRANSISTOR DTC144EK
Q21	8-729-901-01	s	TRANSISTOR DTC144EK
Q22	8-729-901-01	s	TRANSISTOR DTC144EK
Q30	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q31	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q32	8-729-230-49	s	TRANSISTOR 2SC2712-YG

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Ref. No. or Q'ty	Part No.	SP	Description
Q40	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q41	8-729-202-38	s	TRANSISTOR 2SC3326N
Q101	8-729-901-01	s	TRANSISTOR DTC144EK
Q102	8-729-901-01	s	TRANSISTOR DTC144EK
Q103	8-729-901-01	s	TRANSISTOR DTC144EK
Q104	8-729-901-01	s	TRANSISTOR DTC144EK
Q105	8-729-901-01	s	TRANSISTOR DTC144EK
Q106	8-729-901-01	s	TRANSISTOR DTC144EK
Q107	8-729-901-01	s	TRANSISTOR DTC144EK
Q108	8-729-901-01	s	TRANSISTOR DTC144EK
Q109	8-729-901-01	s	TRANSISTOR DTC144EK
Q110	8-729-901-01	s	TRANSISTOR DTC144EK
Q111	8-729-901-01	s	TRANSISTOR DTC144EK
Q112	8-729-901-01	s	TRANSISTOR DTC144EK
Q113	8-729-901-01	s	TRANSISTOR DTC144EK
Q114	8-729-901-01	s	TRANSISTOR DTC144EK
Q116	8-729-901-01	s	TRANSISTOR DTC144EK
Q118	8-729-901-06	s	TRANSISTOR DTA144EK
Q119	8-729-901-06	s	TRANSISTOR DTA144EK
Q120	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q121	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q122	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q123	8-729-901-06	s	TRANSISTOR DTA144EK
Q124	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q125	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q126	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q128	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q130	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q131	8-729-901-06	s	TRANSISTOR DTA144EK
Q140	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q141	8-729-901-01	s	TRANSISTOR DTC144EK
Q150A	8-729-900-89	s	TRANSISTOR DTC144ES
*c	Not in use.		
Q151A	8-729-900-89	s	TRANSISTOR DTC144ES
*c	Not in use.		
Q201	8-729-901-01	s	TRANSISTOR DTC144EK
Q203	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q204	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q205	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q206	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q207	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q208	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q209	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q210	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q211	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q212	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q213	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q214	8-729-901-06	s	TRANSISTOR DTA144EK
Q215	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q216	8-729-901-01	s	TRANSISTOR DTC144EK
Q261	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q262	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q304	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q305	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q306	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q310	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q311	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q312	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q313	8-729-901-01	s	TRANSISTOR DTC144EK

NOTES: *a; S/N 10001 thru 10030
*b; S/N 10001 thru 10130
*c; S/N 10001 thru 10280
*d; S/N 10001 thru 10480
*e; S/N 10131 thru 10280

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Ref. No. or Q'ty	Part No.	SP	Description
Q314	8-729-901-01	s	TRANSISTOR DTC144EK
Q320	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q323	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q324	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q326	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q327	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q328	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q329	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q333	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q334	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q335	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q336	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q337	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q339	8-729-202-38	s	TRANSISTOR 2SC3326N
Q402	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q420	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q421	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q430	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q431	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q432	8-729-903-97	s	TRANSISTOR FMS1FE
Q433	8-729-903-97	s	TRANSISTOR FMS1FE
Q434	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q435	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q438	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q439	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q440	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q480	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q481	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q482	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q483	8-729-230-49	s	TRANSISTOR 2SC2712-YG
R10	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R11	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R12	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R13	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R14	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R15	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R20	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R21	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R22	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R30	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R31	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R32	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R33	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R34	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R35	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R36	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R37	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R41	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R42	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R43	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R50	1-216-295-00	s	METAL, CHIP 0
R52	Deleted.		
*c	1-216-295-00	s	METAL, CHIP 0
R101	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R102	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R103	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R104	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
*b	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R105	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R106	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R107	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R108	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R109	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R110	1-216-638-11	s	METAL, CHIP 300 0.5% 1/10W
*b	1-216-636-11	s	METAL, CHIP 240 0.5% 1/10W
R111	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R112	1-216-115-00	s	METAL, CHIP 560K 5% 1/10W
R114	Deleted.		
*c	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R114A	1-247-887-00	s	CARBON 220K 5% 1/4W
*c	Not in use.		
R115	1-216-129-00	s	METAL, CHIP 2.2M 5% 1/10W
R116	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R117	1-216-668-11	s	METAL, CHIP 5.1K 0.5% 1/10W
R118	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R119	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R120	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R121	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R122	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R123	1-216-640-11	s	METAL, CHIP 360 0.5% 1/10W
*b	1-216-638-11	s	METAL, CHIP 300 0.5% 1/10W
R124	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R125	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R126	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R127	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R128	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R129	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R130	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
*b	1-216-637-11	s	METAL, CHIP 270 0.5% 1/10W
R132	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
*c	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R135	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R136	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R137A	1-249-429-11	s	CARBON 10K 5% 1/4W
*b	Not in use.		
R138	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R139	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R140	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W
R141	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R142	1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W
R143	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W
*c	Change 22K -> 27K.		
R144	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R145	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R146	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R148	1-216-654-11	s	METAL, CHIP 1.3K 0.5% 1/10W
R151	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R152	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R155	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R156	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R157	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R158	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R159	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R160	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R161	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R162	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R163	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R164	1-216-295-00	s	METAL, CHIP 0

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R165	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R166	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R168	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R169	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R170	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R171	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R172	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R173	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R174	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R175	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R176	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R177	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R178	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R179	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R181	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R182	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R183	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R184	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R185	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R186	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R187	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R188	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R190A	1-249-429-11	s	CARBON 10K 5% 1/4W
*c	Not in use.		
R196	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R197	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R201	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R202	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R203	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R205	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R207	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R208	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R209	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R210	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R211	1-216-295-00	s	METAL, CHIP 0
R213	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R214	1-216-295-00	s	METAL, CHIP 0
R217	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R218	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R219	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R220	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R221	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R222	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R223	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R224	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R225	1-216-656-11	s	METAL, CHIP 1.6K 0.5% 1/10W
R226	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R227	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R228	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R229	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R230	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R232	1-216-063-00	s	METAL, CHIP 3.9K 5% 1/10W
R235	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R250	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R251	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R252	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R253	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R254	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R255	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R256	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R257	1-216-039-00	s	METAL, CHIP 390 5% 1/10W
R258	1-216-642-11	s	METAL, CHIP 430 0.5% 1/10W
R259	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R260	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R261	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R262	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R263	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R264	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R265	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R270	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R271	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R272	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R277	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R278	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R279	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R280	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R281	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R282	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R283	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R284	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R285	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R286	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R287	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R290	1-216-644-11	s	METAL, CHIP 510 0.5% 1/10W
R291	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R293	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R294	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R295	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R296	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R300	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
*d	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R310	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R311	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R312	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
*d	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R313	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R314	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
*d	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R315	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R316	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R317	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R318	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R319	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R320	1-216-669-11	s	METAL, CHIP 5.6K 0.5% 1/10W
R322A	1-215-422-11	s	METAL 1.1K 1% 1/4W
*d	Not in use.		
R323	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R324	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R326	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R327	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R328	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R329	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R330	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R331	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R332	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R333	1-216-627-11	s	METAL, CHIP 100 0.5% 1/10W
R335	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R336	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

Ref. No. or Q'ty	Part No.	SP	Description
R337	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R338	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R339	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R340	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R341	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R342	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R343	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R344	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R345	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R346	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R348	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R349	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R350	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R351	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R352	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R353	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R354	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R355	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R356	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R360	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R361	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R362	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R363	1-216-669-11	s	METAL, CHIP 5.6K 0.5% 1/10W
R364	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R366	1-216-650-11	s	METAL, CHIP 910 0.5% 1/10W
R367	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R368	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R369	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R374	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R375	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R376	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R377	1-216-646-11	s	METAL, CHIP 620 0.5% 1/10W
R378	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R379	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R380	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R381	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R382	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R383	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R384	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R385	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R393	1-216-649-11	s	METAL, CHIP 820 0.5% 1/10W
R394	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R395	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R396	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R397	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R398	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R399	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R400	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R401	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R406	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R407	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R408	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R410	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R411	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R415	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R421	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R422	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R423	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R424	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W

Ref. No. or Q'ty	Part No.	SP	Description
R425	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R426	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R431	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R432	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R440	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R441	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R442	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
*a	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R443	1-216-031-00	s	METAL, CHIP 180 5% 1/10W
R444	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R445	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R446	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R447	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R448	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R449	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R450	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R451	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R452	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R453	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R454	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R455	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R456	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R457	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R458	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R459	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R460	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R461	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R462	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R466	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R467	1-216-648-11	s	METAL, CHIP 750 0.5% 1/10W
*d	1-216-649-11	s	METAL, CHIP 820 0.5% 1/10W
R468	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R469	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R470	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R471	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R472	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R473	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R474	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R475	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R476	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R477	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R478	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R479	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R480	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R481	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R482	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R483	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R484	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R485	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R486	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R487	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R488	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R489A	1-215-441-00	s	METAL 6.8K 1% 1/6W
R490	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R491	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R492	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R493	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R494	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R495	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W

NOTES: *a; S/N 10001 thru 10030
*b; S/N 10001 thru 10130
*c; S/N 10001 thru 10280
*d; S/N 10001 thru 10480
*e; S/N 10131 thru 10280

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R496	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R497	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R498	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R499	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
RV30	1-238-012-11	s	RES, ADJ, CARBON 1K
RV101	1-238-015-11	s	RES, ADJ, CARBON 4.7K
RV102	1-238-016-11	s	RES, ADJ, CARBON 10K
RV103	1-238-016-11	s	RES, ADJ, CARBON 10K
RV104	1-238-017-11	s	RES, ADJ, CARBON 22K
RV105	1-238-012-11	s	RES, ADJ, CARBON 1K
RV106	1-238-017-11	s	RES, ADJ, CARBON 22K
RV107	1-238-017-11	s	RES, ADJ, CARBON 22K
RV108	1-238-017-11	s	RES, ADJ, CARBON 22K
RV109	1-238-015-11	s	RES, ADJ, CARBON 4.7K
RV202	1-238-011-11	s	RES, ADJ, CARBON 470
RV210	1-230-717-11	s	RES, ADJ, CARBON 470
RV211	1-230-717-11	s	RES, ADJ, CARBON 470
RV260	1-230-717-11	s	RES, ADJ, CARBON 470
RV310	1-238-015-11	s	RES, ADJ, CARBON 4.7K
RV311	1-238-015-11	s	RES, ADJ, CARBON 4.7K
RV401	1-238-012-11	s	RES, ADJ, CARBON 1K
RV402	1-238-012-11	s	RES, ADJ, CARBON 1K
RV480	1-238-012-11	s	RES, ADJ, CARBON 1K
RV481	1-238-013-11	s	RES, ADJ, CARBON 2.2K
RV482	1-238-013-11	s	RES, ADJ, CARBON 2.2K

FRAME

Ref. No. or Q'ty	Part No.	SP	Description
2pcs	⚠1-532-203-00	s	FUSE, TIME-LAG 2A 250V "AC-136 BOARD"
2pcs	⚠1-532-237-00	s	FUSE, TIME-LAG 3.15A 250V "DC-53A BOARD"
1pc	1-690-612-11	o	WIRE, FLEXIBLE CARD 20P "SS-49A BOARD TO VM-12P BOARD"
1pc	1-690-613-11	o	WIRE, FLEXIBLE CARD 26P "VO-37A BOARD TO CR-39 BOARD"
1pc	1-690-614-12	o	WIRE, FLEXIBLE CARD 28P "SS-49A BOARD TO DR-176 BOARD"
CN1001	⚠1-580-375-11	s	INLET, AC 3P, MALE "AC IN"
CS1001	1-806-682-91	s	SENSOR, DEW CONDENSATION (with harness)
FB1001	1-543-793-11	s	FILTER, CLAMP (FERRITE CORE) "HARNESS(VM VO-1)"
FB1002	1-543-793-11	s	FILTER, CLAMP (FERRITE CORE) "HARNESS(AU MIC)"
H1001	X-3165-588-1	o	HEAD ASSY, ACE
H1002	8-848-578-12	s	DRUM ASSY DZH-41A-R
	8-848-579-02	s	UPPER DRUM ASSY DZR-41-R
H1003	1-543-695-11	s	HEAD, FULL-ERASE
M904	X-3727-784-1	s	MOTOR ASSY (includes CM-14 board) "CASSETTE COMPARTMENT"
M1002	8-835-480-02	s	MOTOR, DC SCV-0401A "CAPSTAN"
M1003	8-835-432-01	s	MOTOR, DC SRV-0201A "T-REEL"
M1004	8-835-432-01	s	MOTOR, DC SRV-0201A "R-REEL"
M1005	X-3165-593-2	o	MOTOR ASSY, CAM "LOADING"
PM1001	1-454-531-11	s	SOLENOID, PLUNGER (with harness) "BRAKE"
PM1002	1-454-434-21	s	SOLENOID, PLUNGER (with harness) "PINCH"
PM1003	1-454-334-71	s	SOLENOID, PLUNGER (with harness) "T-BRAKE"
S1001	1-571-099-11	s	SWITCH, MICRO "CASSETTE DOWN"
S1002	1-570-771-11	s	SWITCH, MICRO "MISS REC"
S1003	1-571-099-11	s	SWITCH, MICRO "VHS CASSETTE"
S1004	⚠1-570-052-11	s	SWITCH, PUSH (AC POWER) "POWER"
S1005	⚠1-570-173-11	s	SWITCH, SLIDE (VOLTAGE SELECT) "VOLTAGE SELECTOR"
T901	⚠1-450-912-11	s	TRANSFORMER, POWER (with harness)

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

HARNESS'S CHILD PARTS

HARNESS(A-ERASE):CN302/SS-49A board to CN617/AH-28 board

Ref. No. or Q'ty	Part No.	SP	Description
CN302F	1-569-196-11	o	HOUSING, 3P
1pc	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN617F	1-569-195-41	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(AC INLET): to CN1/AC-136 board

1pc	⚠1-535-316-11	o	TERMINAL, GROUND (M4)
CN1F	⚠1-562-211-11	o	HOUSING, VH 3P
2pcs	⚠1-562-210-11	o	CONTACT, FEMALE, AWG18-22
CN1001	⚠1-580-375-11	s	INLET, AC 3P, MALE
1pc	4-605-946-01	o	COVER, AC INLET

HARNESS(AU CONT):CN142/SS-49A board to CN311/AU-161A board

Unstock Part

HARNESS(AU HEAD):CN315,316/SS-49A board to CN616/AH-28 board

CN315F	1-569-196-21	o	HOUSING, 3P
1pcs	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN316F	1-569-196-41	o	HOUSING, 3P
1pcs	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN616F	1-569-197-11	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(AU IN):CN309/AU-161A board to CN501/CP-183 board

CN309F	1-569-197-41	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN501F	1-569-197-41	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(AU MIC):CN2/CN-633 board to CN314/AU-161A board

CN314F	1-569-197-11	o	HOUSING, 4P
1pc	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN2F	1-569-197-11	o	HOUSING, 4P
1pc	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
FB1002	1-543-793-11	s	FILTER, CLAMP (FERRITE CORE)

HARNESS(AU MON):CN154/KY-219 board to CN307/AU-161A board

Unstock Part

(HARNESS'S CHILD PARTS)

HARNESS(AU OUT):CN310/AU-161A board to CN502/CP-183 board

Ref. No. or Q'ty	Part No.	SP	Description
CN310F	1-569-202-21	o	HOUSING, 9P
9pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN502F	1-569-202-21	o	HOUSING, 9P
9pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(AU REG):CN140/SS-49A board to CN313/AU-161A board

Unstock Part

HARNESS(CAPSTAN):CN632/DR-176 board to CN603/CAPSTAN motor

CN632F	1-569-202-11	o	HOUSING, 9P
8pcs	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
1pc	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN603F	1-569-202-11	o	HOUSING, 9P
8pcs	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
1pc	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(CASSECON):CN105/SS-49A board to CN001/CM-14 board

Unstock Part

HARNESS(CASSETTE DOWN): to CN652/HN-160 board

CN652F	1-569-195-21	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
S1001	1-571-099-11	s	SWITCH, MICRO

HARNESS(CN-KY):CN152/KY-219 board to CN1/CN-633 board

Unstock Part

HARNESS(CR-SS):CN133/SS-49A board to CN213/CR-39 board

Unstock Part

HARNESS(CTL):CN107/SS-49A board to CN618/AH-28 board

CN107F	1-569-196-11	o	HOUSING, 3P
1pc	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN618F	1-569-195-11	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(DRUM):CN634/DR-167 board to CN604/DRUM motor

CN634	1-562-748-11	o	HOUSING, BOARD-IN 15P
15pcs	1-564-832-11	o	CONTACT, MALE
CN604F	1-580-938-11	o	HOUSING, 15P
15pcs	1-565-740-11	o	CONTACT, FEMALE

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(HARNESS'S CHILD PARTS)

HARNESS(F ERASE):CN303/SS-49A board to CN619/FULL ERASE HEAD

Ref. No. or Q'ty	Part No.	SP	Description
CN303F	1-569-196-31	o	HOUSING, 3P
1pc	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN619F	1-569-195-11	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(KY):CN111/SS-49A board to CN151/KY-219 board

Ref. No. or Q'ty	Part No.	SP	Description
CN111F	1-569-202-31	o	HOUSING, 9P
9pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN151F	1-569-202-31	o	HOUSING, 9P
9pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(LD MOTOR):CN106/SS-49A board to CN620/LD-35 board

Ref. No. or Q'ty	Part No.	SP	Description
CN106	1-562-735-11	o	HOUSING, BOARD-IN 2P
2pcs	1-564-831-11	o	CONTACT, MALE
CN620F	1-569-195-11	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(LED):CN654/HN-160 board to LE-80 board

Ref. No. or Q'ty	Part No.	SP	Description
CN654F	1-569-195-41	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(LS SENSOR):CN635/DR-167 board to CN610/SE-151 board

Ref. No. or Q'ty	Part No.	SP	Description
CN635	1-562-735-11	o	HOUSING, BOARD-IN 2P
2pcs	1-564-832-11	o	CONTACT, MALE
CN610F	1-569-195-11	o	HOUSING, 2P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(MISS REC): to CN659/HN-160 board

Ref. No. or Q'ty	Part No.	SP	Description
CN659F	1-569-195-21	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
S1002	1-570-771-11	s	SWITCH, MICRO

HARNESS(OPTION1):CN114/SS-49A board to CN551/OPTION board

Ref. No. or Q'ty	Part No.	SP	Description
CN114F	1-569-204-11	o	HOUSING, 11P
11pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN551F	1-569-204-11	o	HOUSING, 11P
11pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(OPTION2):CN110/SS-49A board to CN552/OPTION board

Ref. No. or Q'ty	Part No.	SP	Description
CN110F	1-569-205-31	o	HOUSING, 12P
12pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN552F	1-569-205-11	o	HOUSING, 12P
12pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

(HARNESS'S CHILD PARTS)

HARNESS(POWER SW):CN2/AC-136 board to CN3/AC-136 board

Ref. No. or Q'ty	Part No.	SP	Description
CN2F	⚠1-562-285-11	o	HOUSING, VH 4P
2pcs	⚠1-562-210-11	o	CONTACT, FEMALE, AWG18-22
CN3F	⚠1-562-211-11	o	HOUSING, VH 3P
2pcs	⚠1-562-210-11	o	CONTACT, FEMALE, AWG18-22
S1004	⚠1-570-052-11	s	SWITCH, PUSH (AC POWER)
1pc	3-177-256-01	o	COVER, SWITCH

HARNESS(REMAIN):CN116/SS-49A board to CN503/CP-183 board

Ref. No. or Q'ty	Part No.	SP	Description
CN116F	1-569-206-41	o	HOUSING, 13P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN503F	1-569-201-11	o	HOUSING, 8P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(RP AFM):CN308/AU-161A board to CN805/RP-62A board

Ref. No. or Q'ty	Part No.	SP	Description
CN308F	1-569-199-31	o	HOUSING, 6P
1pc	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN805F	1-569-199-31	o	HOUSING, 6P
1pc	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(RP CONT):CN132/RP-62A board to CN803/SS-49A board

Ref. No. or Q'ty	Part No.	SP	Description
CN132F	1-569-199-41	o	HOUSING, 6P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN803F	1-569-199-41	o	HOUSING, 6P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(RP FSC):CN206/VO-37A board to CN806/RP-62A board

Ref. No. or Q'ty	Part No.	SP	Description
CN206	1-562-738-11	o	HOUSING, BOARD-IN 5P
5pcs	1-564-831-11	o	CONTACT, MALE
CN806F	1-569-198-11	o	HOUSING, 5P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(RP PB):CN202/VO-37A board to CN802/RP-62A board

Ref. No. or Q'ty	Part No.	SP	Description
CN202	1-569-740-11	o	HOUSING, BOARD-IN 7P
7pcs	1-564-831-11	o	CONTACT, MALE
CN802F	1-569-200-11	o	HOUSING, 7P
7pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(RP REC):CN207/VO-37A board to CN807/RP-62A board

Ref. No. or Q'ty	Part No.	SP	Description
CN207	1-569-739-11	o	HOUSING, BOARD-IN 6P
6pcs	1-564-831-11	o	CONTACT, MALE
CN807F	1-569-199-11	o	HOUSING, 6P
6pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

(HARNESS'S CHILD PARTS)

Ref. No.
or Q'ty Part No. SP Description

HARNESS(RP-VO):CN208/VO-37A board to CN808/RP-62A board

Ref. No. or Q'ty	Part No.	SP	Description
CN208	1-562-736-11	o	HOUSING, BOARD-IN 3P
3pcs	1-564-831-11	o	CONTACT, MALE
CN808F	1-569-196-11	o	HOUSING, 3P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(S-DR1):CN1/DR-153(b) board to CN1/S-REEL motor

Unstock Part

HARNESS(S-DR2):CN2/DR-153(b) board to CN2/S-REEL motor

Unstock Part

HARNESS(S-REEL):CN123/SS-49A board to CN3/DR-153(b) board

Unstock Part

HARNESS(S-TEN):CN657/HN-160 board to LE-86 & SE-151 boards

Ref. No. or Q'ty	Part No.	SP	Description
CN316F	1-569-196-41	o	HOUSING, 3P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(SS REG):CN100/SS-49A board to CN902/DC-53A board

Ref. No. or Q'ty	Part No.	SP	Description
CN100F	1-561-992-11	o	HOUSING, 11P
11pcs	1-560-901-21	o	CONTACT, FEMALE
CN902F	1-561-992-11	o	HOUSING, 11P
11pcs	1-560-901-21	o	CONTACT, FEMALE

HARNESS(SW-1):CN102/SS-49A board to CN658/HN-160 board

Unstock Part

HARNESS(SW-2):CN103/SS-49A board to CN655/HN-160 board

Unstock Part

HARNESS(T-BRAKE C):DR-167 board to CN1/DUS-544 board

Ref. No. or Q'ty	Part No.	SP	Description
CN1F	1-569-195-11	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(T-DR1):CN1/DR-153(a) board to CN1/T-REEL motor

Unstock Part

HARNESS(T-DR2):CN2/DR-153(a) board to CN2/T-REEL motor

Unstock Part

HARNESS(T-REEL):CN152/KY-219 board to CN1/CN-633 board

Unstock Part

(HARNESS'S CHILD PARTS)

Ref. No.
or Q'ty Part No. SP Description

HARNESS(T-TOP):CN651/HN-160 board to SE-152 board

Ref. No. or Q'ty	Part No.	SP	Description
CN651F	1-569-195-11	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(TR):CN117/SS-49A board to CN157/KY-219 board

Ref. No. or Q'ty	Part No.	SP	Description
CN117F	1-569-197-21	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN157F	1-569-197-21	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(VHS CASSETTE): to CN653/HN-160 board

Ref. No. or Q'ty	Part No.	SP	Description
CN653F	1-569-195-31	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
S1003	1-571-099-11	s	SWITCH, MICRO

HARNESS(VM VO-1):CN221/VO-37A board to CN701/VM-12P board

Ref. No. or Q'ty	Part No.	SP	Description
CN221F	1-569-202-11	o	HOUSING, 9P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN701F	1-569-202-41	o	HOUSING, 9P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
FB1001	1-543-793-11	s	FILTER, CLAMP (FERRITE CORE)

HARNESS(VM VO-2):CN222/VO-37A board to CN702/VM-12P board

Ref. No. or Q'ty	Part No.	SP	Description
CN222F	1-569-198-41	o	HOUSING, 5P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN702F	1-569-198-41	o	HOUSING, 5P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(VO CP1):CN231/VO-37A board to CN504/CP-183 board

Ref. No. or Q'ty	Part No.	SP	Description
CN231F	1-569-198-41	o	HOUSING, 5P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN504F	1-569-198-41	o	HOUSING, 5P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(VO CP2):CN232/VO-37A board to CN505/CP-183 board

Ref. No. or Q'ty	Part No.	SP	Description
CN232F	1-569-201-21	o	HOUSING, 8P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN505F	1-569-201-21	o	HOUSING, 8P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(VO CONT):CN203/VO-37A board to CN131/SS-49A board

Unstock Part

HARNESS(VO REG):CN201/VO-37A board to CN130/SS-49A board

Unstock Part

NOTES: *a; S/N 10001 thru 10030
*b; S/N 10001 thru 10130
*c; S/N 10001 thru 10280
*d; S/N 10001 thru 10480
*e; S/N 10131 thru 10280

(HARNESS'S CHILD PARTS)

HARNESS(VOLTAGE SELECTER): to CN5/AC-136 board

Ref. No. or Q'ty	Part No.	SP	Description
CN5F	⚠1-562-286-11	o	HOUSING, VH 5P
3pcs	⚠1-562-210-11	o	CONTACT, FEMALE, AWG18-22
S1005	⚠1-570-173-11	s	SWITCH, SLIDE (VOLTAGE SELECT)
1pc	3-175-981-01	o	COVER, SWITCH

BRAKE SOLENOID: to CN656/HN-160 board

Ref. No. or Q'ty	Part No.	SP	Description
CN656F	1-569-196-11	o	HOUSING, 3P
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

DEW CONDENSATION SENSOR: to CN108/SS-49A board

Ref. No. or Q'ty	Part No.	SP	Description
CN108F	1-562-147-11	o	HOUSING, 2P
2pcs	1-564-026-00	o	CONTACT, FEMALE, AWG26-30

PINCH SOLENOID: to CN118/SS-49A board

Ref. No. or Q'ty	Part No.	SP	Description
CN118F	1-569-196-31	o	HOUSING, 3P
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

POWER TRANSFORMER:CN4/AC-136 board to CN101/DC-53A board

Ref. No. or Q'ty	Part No.	SP	Description
CN4F	⚠1-562-286-11	o	HOUSING, VH 5P
3pcs	⚠1-562-210-11	o	CONTACT, FEMALE, AWG18-22
CN101F	⚠1-562-285-11	o	HOUSING, VH 4P
4pcs	⚠1-562-210-11	o	CONTACT, FEMALE, AWG18-22

T-BRAKE SOLENOID: to CN633/DR-167 board

Ref. No. or Q'ty	Part No.	SP	Description
CN633F	1-569-196-11	o	HOUSING, 3P
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

14-4. PACKING MATERIALS AND ACCESSORIES

Ref. No. or Q'ty	Part No.	SP	Description
1pc	3-177-197-01	o	CUSHION (UPPER)
1pc	3-177-198-01	o	CUSHION (LOWER)
1pc	3-177-399-01	o	INDIVIDUAL CARTON
1pc	3-704-295-01	o	BAG, PROTECTION (STANDARD)
1pc	⚠3-754-503-13	s	MANUAL, INSTRUCTION

14-5. OPTIONAL FIXTURES LIST

Part No.	SP	Description
H-7099-035-H	o	TORQUE GAUGE ADAPTOR
H-7099-039-H	o	TORQUE GAUGE
H-7099-052-H	o	ALIGNMENT TAPE, JVC-MH-2(PAL)
J-6080-811-A	o	GUIDE HEIGHT ADJ. DRIVER
or		
J-6082-044-A	o	GUIDE HEIGHT ADJ. DRIVER
J-6080-840-A	o	SMALL MIRROR
J-6090-014-A	o	MOLYCOTE GREASE EM-30LG
or		
4-918-645-01	o	MOLYCOTE GREASE EM-30L
J-6380-040-A	o	RG REFERENCE PIN (1)
J-6380-050-A	o	RG REFERENCE PIN (2)
J-6380-080-A	o	REFERENCE PLATE
J-6380-090-A	o	REEL TABLE HEIGHT ADJ. TOOL
J-6380-550-A	o	MASTER BLOCK
J-6380-700-A	o	MASTER BLOCK
J-6380-710-A	o	X VALUE ADJUSTMENT TOOL
J-6381-370-A	o	RP EXTENSION TOOL
J-6381-380-A	o	S-BNC VIDEO CABLE
J-6381-910-A	o	Y/C DELAY ADJUSTMENT TOOL
2-034-697-00	o	CLEANING CLOTH
7-700-736-05	o	L-SHAPED HEXAGONAL WRENCH(1.5mm)
7-700-736-06	o	L-SHAPED HEXAGONAL WRENCH(0.89mm)
7-700-751-02	o	BOX DRIVER(5.5mm)
8-192-602-48	o	ALIGNMENT TAPE, KRV-4821PSA
8-192-603-96	o	ALIGNMENT TAPE, KRV-39PF
8-192-604-96	o	ALIGNMENT TAPE, KRV-45HPS(S-VHS)
8-192-604-16	o	ALIGNMENT TAPE, KRV-44PS(VHS)
8-896-024-94	o	BLANK TAPE, GR-120KG(VHS)
9-911-053-00	o	THICKNESS GAUGE
9-919-573-01	o	CLEANING FLUID

COMMERCIALLY SOLD

TENTELOMETER, T2-H7-UMC
HEAD DEGAUSSER
S-VHS BLANK TAPE

NOTES: *a; S/N 10001 thru 10030 *c; S/N 10001 thru 10280 *e; S/N 10131 thru 10280
*b; S/N 10001 thru 10130 *d; S/N 10001 thru 10480

14-6. ADDITIONAL ELECTRICAL PARTS LIST

AU-161A BOARD **SERIAL NO. 20001 AND HIGHER**

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-313-B	o	MOUNTED CIRCUIT BOARD, AU-161A
C1	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C2	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C4	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C5	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C6	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C7	1-130-493-00	s	MYLAR 0.068uF 5% 50V
C8	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C11	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C12	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C13	1-163-275-11	s	CERAMIC, CHIP 1000pF 5% 50V
C14	1-126-163-11	s	ELECT 4.7uF 20% 50V
C15	1-126-163-11	s	ELECT 4.7uF 20% 50V
C17	1-124-589-11	s	ELECT 47uF 20% 16V
C18	1-126-163-11	s	ELECT 4.7uF 20% 50V
C19	1-126-163-11	s	ELECT 4.7uF 20% 50V
C20	1-126-160-11	s	ELECT 1uF 20% 50V
C21	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C22	1-124-589-11	s	ELECT 47uF 20% 16V
C23	1-130-475-00	s	MYLAR 2200pF 5% 50V
C24	1-126-163-11	s	ELECT 4.7uF 20% 50V
C25	1-130-487-00	s	MYLAR 0.022uF 5% 50V
C26	1-124-239-00	s	ELECT 6.8uF 20% 25V
C27	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C28	1-124-589-11	s	ELECT 47uF 20% 16V
C29	1-126-157-11	s	ELECT 10uF 20% 16V
C30	1-126-934-11	s	ELECT 220uF 20% 16V
C31	1-124-584-00	s	ELECT 100uF 20% 10V
C33	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C34	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C36	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C38	1-163-275-11	s	CERAMIC, CHIP 1000pF 5% 50V
C39	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C40	1-126-163-11	s	ELECT 4.7uF 20% 50V
C41	1-126-163-11	s	ELECT 4.7uF 20% 50V
C42	1-124-589-11	s	ELECT 47uF 20% 16V
C43	1-126-163-11	s	ELECT 4.7uF 20% 50V
C44	1-126-163-11	s	ELECT 4.7uF 20% 50V
C46	1-130-475-00	s	MYLAR 2200pF 5% 50V
C47	1-126-163-11	s	ELECT 4.7uF 20% 50V
C48	1-130-487-00	s	MYLAR 0.022uF 5% 50V
C49	1-124-239-00	s	ELECT 6.8uF 20% 25V
C50	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C51	1-126-157-11	s	ELECT 10uF 20% 16V
C52	1-126-934-11	s	ELECT 220uF 20% 16V
C53	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C54	1-126-157-11	s	ELECT 10uF 20% 16V
C55	1-126-157-11	s	ELECT 10uF 20% 16V
C56	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C57	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C58	1-124-589-11	s	ELECT 47uF 20% 16V
C59	1-124-589-11	s	ELECT 47uF 20% 16V
C60	1-124-589-11	s	ELECT 47uF 20% 16V
C61	1-124-589-11	s	ELECT 47uF 20% 16V
C66	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C201	1-124-257-00	s	ELECT 2.2uF 20% 50V
C202	1-124-257-00	s	ELECT 2.2uF 20% 50V
C203	1-163-275-11	s	CERAMIC, CHIP 1000pF 5% 50V
C206	1-126-163-11	s	ELECT 4.7uF 20% 50V
C207	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C209	1-124-589-11	s	ELECT 47uF 20% 16V
C211	1-126-160-11	s	ELECT 1uF 20% 50V
C212	1-126-163-11	s	ELECT 4.7uF 20% 50V
C213	1-124-234-00	s	ELECT 22uF 20% 16V
C214	1-124-589-11	s	ELECT 47uF 20% 16V
C215	1-126-163-11	s	ELECT 4.7uF 20% 50V
C216	1-130-477-00	s	MYLAR 3300pF 5% 50V
C217	1-126-163-11	s	ELECT 4.7uF 20% 50V
C220	1-126-157-11	s	ELECT 10uF 20% 16V
C223	1-130-486-00	s	MYLAR 0.018uF 10% 50V
C224	1-130-475-00	s	MYLAR 2200pF 5% 50V
C226	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C227	1-107-614-11	s	CERAMIC 120pF 5% 500V
C228	1-107-614-11	s	CERAMIC 120pF 5% 500V
C229	1-163-143-00	s	CERAMIC, CHIP 0.0012uF 5% 50V
C230	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C231	1-126-163-11	s	ELECT 4.7uF 20% 50V
C235	1-126-157-11	s	ELECT 10uF 20% 16V
C236	1-126-163-11	s	ELECT 4.7uF 20% 50V
C238	1-126-160-11	s	ELECT 1uF 20% 50V
C239	1-126-157-11	s	ELECT 10uF 20% 16V
C240	1-107-612-11	s	CERAMIC 100PF 5% 500V
C303	1-163-275-11	s	CERAMIC, CHIP 1000pF 5% 50V
C306	1-126-163-11	s	ELECT 4.7uF 20% 50V
C307	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C309	1-124-589-11	s	ELECT 47uF 20% 16V
C311	1-126-160-11	s	ELECT 1uF 20% 50V
C312	1-126-163-11	s	ELECT 4.7uF 20% 50V
C313	1-124-234-00	s	ELECT 22uF 20% 16V
C314	1-124-589-11	s	ELECT 47uF 20% 16V
C315	1-126-163-11	s	ELECT 4.7uF 20% 50V
C316	1-130-477-00	s	MYLAR 3300pF 5% 50V
C317	1-126-163-11	s	ELECT 4.7uF 20% 50V
C320	1-126-157-11	s	ELECT 10uF 20% 16V
C323	1-130-486-00	s	MYLAR 0.018uF 10% 50V
C324	1-130-475-00	s	MYLAR 2200pF 5% 50V
C326	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C327	1-107-614-11	s	CERAMIC 120pF 5% 500V
C328	1-107-614-11	s	CERAMIC 120pF 5% 500V
C329	1-163-143-00	s	CERAMIC, CHIP 0.0012uF 5% 50V
C330	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C331	1-126-163-11	s	ELECT 4.7uF 20% 50V
C339	1-126-157-11	s	ELECT 10uF 20% 16V
C340	1-107-612-11	s	CERAMIC 100PF 5% 500V
C402	1-136-558-11	s	FILM 3900pF 5% 630V
C403	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C404	1-130-473-00	s	MYLAR 0.0015uF 5% 50V
C405	1-124-589-11	s	ELECT 47uF 20% 16V
C406	1-124-234-00	s	ELECT 22uF 20% 16V
C407	1-124-234-00	s	ELECT 22uF 20% 16V
C414	1-126-157-11	s	ELECT 10uF 20% 16V
C415	1-126-934-11	s	ELECT 220uF 20% 16V
C417	1-126-163-11	s	ELECT 4.7uF 20% 50V
C418	1-126-934-11	s	ELECT 220uF 20% 16V
C420	1-124-465-00	s	ELECT 0.47uF 20% 50V
CN302 W	1-564-002-11	s	CONNECTOR, 3P, MALE

(AU-161A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
CN303 R	1-506-468-11	s	CONNECTOR, 3P, MALE
CN307 B	1-506-473-11	s	CONNECTOR, 8P, MALE
CN308 Y	1-506-471-11	s	CONNECTOR, 6P, MALE
CN309 Y	1-506-469-11	s	CONNECTOR, 4P, MALE
CN310 B	1-506-474-11	s	CONNECTOR, 9P, MALE
CN311 Y	1-506-476-11	s	CONNECTOR, 11P, MALE
CN313 R	1-506-472-11	s	CONNECTOR, 7P, MALE
CN314 W	1-506-469-11	s	CONNECTOR, 4P, MALE
CN315 B	1-506-468-11	s	CONNECTOR, 3P, MALE
CN316 Y	1-506-468-11	s	CONNECTOR, 3P, MALE
D2	8-719-104-34	s	DIODE 1S2836
D5	8-719-801-78	s	DIODE 1SS184
D6	8-719-104-34	s	DIODE 1S2836
D7	8-719-109-93	s	DIODE RD6.2ES-B2
D8	8-719-801-78	s	DIODE 1SS184
D201	8-719-801-78	s	DIODE 1SS184
D202	8-719-801-78	s	DIODE 1SS184
D203	8-719-801-78	s	DIODE 1SS184
D204	8-719-911-19	s	DIODE 1SS119
D302	8-719-801-78	s	DIODE 1SS184
D303	8-719-801-78	s	DIODE 1SS184
D403	8-719-109-81	s	DIODE RD4.7ES-B2
D404	8-719-801-78	s	DIODE 1SS184
D405	8-719-110-03	s	DIODE RD7.5ES-B2
D406	8-719-801-78	s	DIODE 1SS184
D409	8-719-801-78	s	DIODE 1SS184
D410	8-719-911-19	s	DIODE 1SS119
D411	8-719-911-19	s	DIODE 1SS119
D414	8-719-110-14	s	DIODE RD9.1ESB1
FL1	1-236-570-11	s	FILTER, BANDPASS 1.4MHz
FL2	1-236-569-11	s	FILTER, BANDPASS 1.8MHz
FL201	1-239-008-11	s	FILTER, LOW-PASS
FL301	1-239-008-11	s	FILTER, LOW-PASS
IC1	8-759-420-15	s	IC AN3932S
IC2	8-759-420-18	s	IC AN3972FC
IC3	8-759-982-03	s	IC RC5532DD
IC4	8-759-602-49	s	IC M5201P
IC5	8-759-035-93	s	IC TC7S32F-TE85L
IC201	8-759-805-20	s	IC LA7297
IC203	8-759-602-49	s	IC M5201P
IC204	8-759-602-49	s	IC M5201P
IC301	8-759-805-20	s	IC LA7297
IC303	8-759-602-49	s	IC M5201P
IC304	8-759-602-49	s	IC M5201P
IC401	8-759-168-20	s	IC TA78L09S
L2	1-408-408-00	s	INDUCTOR 8.2uH
L3	1-410-482-31	s	INDUCTOR 100uH
L4	1-408-408-00	s	INDUCTOR 8.2uH
L201	1-410-088-21	s	INDUCTOR 12mH
L202	1-410-091-31	s	INDUCTOR 22mH
L301	1-410-088-21	s	INDUCTOR 12mH
L302	1-410-091-31	s	INDUCTOR 22mH
L401	1-410-120-11	s	INDUCTOR 1.2mH
Q5	8-729-901-06	s	TRANSISTOR DTA144EK
Q8	8-729-901-06	s	TRANSISTOR DTA144EK
Q10	8-729-119-77	s	TRANSISTOR 2SA1175-FEK
Q12	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q13	8-729-901-01	s	TRANSISTOR DTC144EK

(AU-161A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q14	8-729-202-38	s	TRANSISTOR 2SC3326N
Q15	8-729-202-38	s	TRANSISTOR 2SC3326N
Q201	8-729-901-01	s	TRANSISTOR DTC144EK
Q203	8-729-901-01	s	TRANSISTOR DTC144EK
Q207	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q211	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q212	8-729-901-06	s	TRANSISTOR DTA144EK
Q213	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q303	8-729-901-01	s	TRANSISTOR DTC144EK
Q307	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q312	8-729-202-38	s	TRANSISTOR 2SC3326N
Q313	8-729-901-06	s	TRANSISTOR DTA144EK
Q314	8-729-901-01	s	TRANSISTOR DTC144EK
Q403	8-729-140-96	s	TRANSISTOR 2SD774-34
Q404	8-729-901-01	s	TRANSISTOR DTC144EK
Q406	8-729-378-84	s	TRANSISTOR 2SD788
Q407	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q408	8-729-140-93	s	TRANSISTOR 2SB739-34
Q409	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q414	8-729-901-01	s	TRANSISTOR DTC144EK
Q416	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q422	8-729-901-06	s	TRANSISTOR DTA144EK
R1	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R2	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R3	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R5	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R6	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R7	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R8	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R9	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R10	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R11	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R12	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R13	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W
R14	1-208-822-11	s	METAL, CHIP 47K 0.5% 1/10W
R15	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R16	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R17	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R23	1-208-810-11	s	METAL, CHIP 15K 0.5% 1/10W
R24	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R25	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R29	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R30	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R31	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R32	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R33	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R36	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R41	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R42	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R43	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R44	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R46	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R47	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R48	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R49	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R50	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R51	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R52	1-216-045-00	s	METAL, CHIP 680 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R58	1-208-806-11	s	METAL, CHIP 10K 0.5% 1/10W
R59	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R60	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R64	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R65	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R66	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R67	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R68	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R69	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R70	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R71	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R72	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R73	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R74	1-216-047-91	s	METAL, CHIP 820 5% 1/10W
R77	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R81	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R82	1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W
R83	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R84	1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W
R88	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R89	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R90	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R201	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R202	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R203	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R204	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R206	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R207	1-216-001-00	s	METAL, CHIP 10 5% 1/10W
R208	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R209	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R211	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R213	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R214	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R217	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R218	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R219	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R221	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R222	1-216-666-11	s	METAL, CHIP 4.3K 0.5% 1/10W
R223	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R229	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R232	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R235	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R236	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R238	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R239	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R251	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R252	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R261	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R262	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R263	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R267	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R268	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R269	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R271	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R272	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R273	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R274	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R275	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R277	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R278	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R279	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R280	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R281	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R282	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R285	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R286	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R287	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R288	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R306	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R307	1-216-001-00	s	METAL, CHIP 10 5% 1/10W
R308	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R309	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R311	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R313	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R314	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R317	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R318	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R319	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R321	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R322	1-216-666-11	s	METAL, CHIP 4.3K 0.5% 1/10W
R323	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R329	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R332	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R335	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R336	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R338	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R339	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R350	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R351	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R361	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R362	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R363	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R367	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R368	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R369	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R371	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R372	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R373	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R374	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R375	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R377	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R378	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R379	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R380	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R381	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R382	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R383	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R384	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R385	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R386	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R387	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R402	1-249-381-11	s	CARBON 1 5% 1/4W
R403	1-216-298-00	s	METAL 2.2 5% 1/10W
R407	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R408	1-216-304-11	s	METAL, CHIP 3.3 5% 1/10W
R411	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R412	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R413	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R414	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R415	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R416	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R417	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R418	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R419	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R429	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R430	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R432	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R433	1-249-407-11	s	CARBON 150 5% 1/4W
R434	1-216-017-91	s	METAL, CHIP 47 5% 1/10W
RV1	1-241-767-21	s	RES, ADJ, CARBON 100K
RV2	1-238-019-11	s	RES, ADJ, CARBON 47K
RV3	1-230-522-11	s	RES, ADJ, METAL 4.7K
RV4	1-238-016-11	s	RES, ADJ, CARBON 10K
RV5	1-241-763-11	s	RES, ADJ, METAL 4.7K
RV6	1-238-019-11	s	RES, ADJ, CARBON 47K
RV7	1-230-522-11	s	RES, ADJ, METAL 4.7K
RV8	1-238-016-11	s	RES, ADJ, CARBON 10K
RV9	1-241-763-11	s	RES, ADJ, METAL 4.7K
RV10	1-238-016-11	s	RES, ADJ, CARBON 10K
RV11	1-238-016-11	s	RES, ADJ, CARBON 10K
RV201	1-241-765-11	s	RES, ADJ, METAL 22K
RV202	1-238-019-11	s	RES, ADJ, CARBON 47K
RV203	1-241-763-11	s	RES, ADJ, METAL 4.7K
RV204	1-241-762-11	s	RES, ADJ, METAL 2.2K
RV205	1-241-768-11	s	RES, ADJ, CARBON 220K
RV301	1-241-765-11	s	RES, ADJ, METAL 22K
RV302	1-238-019-11	s	RES, ADJ, CARBON 47K
RV303	1-241-763-11	s	RES, ADJ, METAL 4.7K
RV304	1-241-762-11	s	RES, ADJ, METAL 2.2K
RV305	1-241-768-11	s	RES, ADJ, CARBON 220K
T401	1-433-330-11	s	TRANSFORMER, BIAS OSCILLATION

CP-183 BOARD **SERIAL NO. 14891 AND HIGHER**

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-6756-339-B	o	MOUNTED CIRCUIT BOARD, CP-183
C1	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C2	1-126-786-11	s	ELECT 47uF 20% 16V
C3	1-126-786-11	s	ELECT 47uF 20% 16V
C4	1-126-786-11	s	ELECT 47uF 20% 16V
C5	1-124-584-00	s	ELECT 100uF 20% 10V
C6	1-126-786-11	s	ELECT 47uF 20% 16V
C7	1-126-794-11	s	ELECT 4.7uF 20% 50V
C8	1-126-794-11	s	ELECT 4.7uF 20% 50V
C10	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C11	1-126-786-11	s	ELECT 47uF 20% 16V
C12	1-124-589-11	s	ELECT 47uF 20% 16V
C13	1-124-589-11	s	ELECT 47uF 20% 16V
C14	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C15	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C16	1-124-584-00	s	ELECT 100uF 20% 10V
CN001	1-573-580-11	s	CONNECTOR, BNC, FEMALE
CN002	1-573-590-13	s	CONNECTOR, ROUND 4P, FEMALE
CN003	1-573-590-13	s	CONNECTOR, ROUND 4P, FEMALE
CN004	1-573-744-11	s	JACK, PIN 2P, FEMALE
CN005	1-573-590-13	s	CONNECTOR, ROUND 4P, FEMALE
CN006	1-573-744-11	s	JACK, PIN 2P, FEMALE
CN007	1-691-273-11	s	JACK, PIN 1P, FEMALE
CN008	1-691-274-11	s	CONNECTOR, BNC, FEMALE
CN501 Y	1-506-483-21	s	CONNECTOR, 4P, MALE
CN502 B	1-506-488-11	o	CONNECTOR 9P, MALE
CN503 W	1-506-487-11	s	CONNECTOR 8P, MALE
CN504 Y	1-506-484-11	s	CONNECTOR 5P, MALE
CN505 B	1-506-487-11	s	CONNECTOR 8P, MALE
CN506 B	1-566-095-11	o	PIN, BOARD TO BOARD 11P
D11	8-719-157-33	s	DIODE RD6.2MB
D12	8-719-800-76	s	DIODE 1SS226
IC1	8-759-932-64	s	IC BU4052BF
IC2	8-759-700-94	s	IC NJM5532M
IC3	8-759-710-86	s	IC NJM2233BM
L1	1-410-482-31	s	INDUCTOR 100uH
L10	1-412-390-21	s	INDUCTOR, CHIP 0uH
L11	1-412-390-21	s	INDUCTOR, CHIP 0uH
Q1	8-729-901-01	s	TRANSISTOR DTC144EK
Q2	8-729-901-01	s	TRANSISTOR DTC144EK
Q3	8-729-901-01	s	TRANSISTOR DTC144EK
Q4	8-729-901-01	s	TRANSISTOR DTC144EK
Q5	8-729-202-38	s	TRANSISTOR 2SC3326N
Q6	8-729-202-38	s	TRANSISTOR 2SC3326N
Q7	8-729-202-38	s	TRANSISTOR 2SC3326N
Q8	8-729-202-38	s	TRANSISTOR 2SC3326N
R2	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R3	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R4	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R5	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R6	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R7	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R8	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R9	1-216-664-11	s	METAL, CHIP 3.6K 0.5% 1/10W
R10	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R11	1-216-664-11	s	METAL, CHIP 3.6K 0.5% 1/10W

(CP-183 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R12	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R13	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R14	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R15	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R16	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R17	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R18	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R19	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R20	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R21	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R22	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R23	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R25	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R26	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R27	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R28	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
RJ1	1-216-295-91	s	RES, CHIP 0
RJ2	1-216-295-91	s	RES, CHIP 0
RJ3	1-216-295-91	s	RES, CHIP 0
RJ4	1-216-295-91	s	RES, CHIP 0
S1	1-570-145-11	s	SWITCH, SLIDE
S2	1-570-145-11	s	SWITCH, SLIDE

CR-39 BOARD **SERIAL NO.15191 AND HIGHER**

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-319-A	o	MOUNTED CIRCUIT BOARD, CR-39
C501	1-126-786-11	s	ELECT 47uF 20% 16V
C502	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C503	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C504	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C505	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C506	1-115-873-91	s	ELECT 3.3uF 20% 50V
C507	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C508	1-115-873-91	s	ELECT 3.3uF 20% 50V
C509	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C510	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C511	1-115-873-91	s	ELECT 3.3uF 20% 50V
C512	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C513	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C514	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C515	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C516	1-163-110-00	s	CERAMIC, CHIP 51pF 5% 50V
C517	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C518	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C519	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C520	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C521	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C522	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C523	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C524	1-163-224-11	s	CERAMIC, CHIP 7pF 50V
C525	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C526	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C527	1-115-871-11	s	ELECT 1uF 20% 50V
C528	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C529	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C530	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C531	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C532	1-163-224-11	s	CERAMIC, CHIP 7pF 50V
C533	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C534	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C535	1-163-224-11	s	CERAMIC, CHIP 7pF 50V
C536	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C537	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C538	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C539	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C540	1-115-871-11	s	ELECT 1uF 20% 50V
C541	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C542	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C543	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C544	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C545	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C546	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C547	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C554	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C555	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C601	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C602	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C604	1-163-220-11	s	CERAMIC, CHIP 3pF 50V
C605	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C606	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C607	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C608	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C609	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V

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Ref. No. or Q'ty	Part No.	SP	Description
C610	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C611	1-163-257-11	s	CERAMIC, CHIP 180pF 5% 50V
C612	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C613	1-163-089-00	s	CERAMIC, CHIP 6pF 50V
C614	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C615	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C616	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C625	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C626	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C627	1-131-377-00	s	TANTALUM 10uF 10% 10V
C628	1-164-492-11	s	CERAMIC, CHIP 0.15uF 10% 16V
C629	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C630	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C631	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C632	1-164-489-11	s	CERAMIC, CHIP 0.22uF 10% 16V
C633	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C634	1-163-114-00	s	CERAMIC, CHIP 75pF 5% 50V
C635	1-163-124-00	s	CERAMIC, CHIP 200pF 5% 50V
C637	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C638	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C639	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C640	1-124-455-00	s	ELECT 100uF 20% 16V
C641	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C642	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C643	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C644	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C645	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C646	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C647	1-164-222-11	s	CERAMIC, CHIP 0.22uF 25V
C648	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C649	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C651	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C652	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C653	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C654	1-131-349-00	s	TANTALUM 2.2uF 10% 35V
C655	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C656	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C657	1-126-176-11	s	ELECT 220uF 20% 10V
C658	1-163-222-11	s	CERAMIC, CHIP 5pF 50V
C659	1-163-275-11	s	CERAMIC, CHIP 1000pF 5% 50V
C660	1-126-794-11	s	ELECT 4.7uF 20% 50V
C661	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C662	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C663	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C664	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C665	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V
C666	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C667	1-163-253-11	s	CERAMIC, CHIP 120pF 5% 50V
C670	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C671	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C675	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C676	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C677	1-131-351-00	s	TANTALUM 4.7uF 10% 35V
C678	1-131-347-00	s	TANTALUM 1uF 10% 35V
C679	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C686	1-163-220-11	s	CERAMIC, CHIP 3pF 50V
C687	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C688	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C689	1-126-786-11	s	ELECT 47uF 20% 16V

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Ref. No. or Q'ty	Part No.	SP	Description
C690	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C691	1-163-134-00	s	CERAMIC, CHIP 510pF 5% 50V
C692	1-124-455-00	s	ELECT 100uF 20% 16V
C693	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C694	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C695	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C697	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C701	1-163-222-11	s	CERAMIC, CHIP 5pF 50V
C702	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C703	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C704	1-163-231-11	s	CERAMIC, CHIP 15pF 5% 50V
C712	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C713	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C715	1-126-786-11	s	ELECT 47uF 20% 16V
C716	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C717	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C718	1-126-786-11	s	ELECT 47uF 20% 16V
C720	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C725	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C801	1-126-786-11	s	ELECT 47uF 20% 16V
C802	1-163-113-00	s	CERAMIC, CHIP 68pF 5% 50V
C803	1-163-127-00	s	CERAMIC, CHIP 270pF 5% 50V
C804	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C805	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C806	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C807	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C808	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C809	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C810	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C811	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C812	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C813	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C814	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C815	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C816	1-126-923-11	s	ELECT 220uF 20% 10V
C817	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C818	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C819	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C820	1-163-231-11	s	CERAMIC, CHIP 15pF 5% 50V
C821	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C822	1-163-139-00	s	CERAMIC, CHIP 820pF 5% 50V
C823	1-163-099-00	s	CERAMIC, CHIP 18pF 5% 50V
C824	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C825	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C826	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C828	1-163-249-11	s	CERAMIC, CHIP 82pF 5% 50V
C829	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C830	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C831	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C832	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C833	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C834	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C835	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C836	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C837	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C838	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C840	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C841	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C842	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V

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Ref. No. or Q'ty	Part No.	SP	Description
C843	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C844	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C845	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C911	1-124-455-00	s	ELECT 100uF 20% 16V
C912	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C913	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C914	1-126-786-11	s	ELECT 47uF 20% 16V
C915	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C916	1-126-786-11	s	ELECT 47uF 20% 16V
C917	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C918	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C919	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C920	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C921	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C922	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C923	1-163-275-11	s	CERAMIC, CHIP 1000pF 5% 50V
C924	1-130-489-00	s	MYLAR 0.033uF 5% 50V
C926	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C927	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C928	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C929	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C930	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C931	1-163-131-00	s	CERAMIC, CHIP 390pF 5% 50V
C940	1-163-023-00	s	CERAMIC, CHIP 0.015uF 5% 50V
C941	1-164-004-11	s	CERAMIC, CHIP 0.1uF 10% 25V
C942	1-164-182-11	s	CERAMIC, CHIP 3300pF 10% 100V
C943	1-164-004-11	s	CERAMIC, CHIP 0.1uF 10% 25V
C944	1-163-023-00	s	CERAMIC, CHIP 0.015uF 5% 50V
C945	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
CN212 W	1-562-686-11	o	CONNECTOR, FPC 26P, FEMALE
CN213 B	1-564-013-21	s	CONNECTOR 3P, MALE
CV601	1-141-346-11	s	CAP, VAR, TRIMMER
CV602	1-141-365-11	s	CAP, TRIMMER 50pF
CV603	1-141-365-11	s	CAP, TRIMMER 50pF
CV800	1-141-276-00	s	CAP, TRIMMER 20pF
CV801	1-141-365-11	s	CAP, TRIMMER 50pF
CV802	1-141-365-11	s	CAP, TRIMMER 50pF
D501	8-719-801-78	s	DIODE 1SS184
D601	8-719-018-80	s	DIODE ND411G-2
D603	8-719-801-78	s	DIODE 1SS184
D801	8-719-800-76	s	DIODE 1SS226
D802	8-719-801-78	s	DIODE 1SS184
D803	8-719-801-78	s	DIODE 1SS184
D804	8-719-800-76	s	DIODE 1SS226
D805	8-719-801-78	s	DIODE 1SS184
FL601	1-236-835-11	s	FILTER, BANDPASS 4.43MHz (REC C)
FL602	1-235-437-11	s	FILTER, BANDPASS 4.43MHz (PB C)
FL604	1-231-280-00	s	FILTER, CERAMIC 4.43MHz
FL605	1-239-325-11	s	FILTER, BANDPASS 5.06MHz
IC501	8-752-333-24	s	IC CXL1506M
IC601	8-759-710-86	s	IC NJM2233BM
IC603	8-759-634-93	s	IC M52059AFP
IC604	8-759-201-47	s	IC TA7357AP
IC608	8-759-710-86	s	IC NJM2233BM
IC901	8-759-701-59	s	IC NJM78M09FA
IC902	8-759-710-86	s	IC NJM2233BM

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Ref. No. or Q'ty	Part No.	SP	Description
L501	1-410-482-31	s	INDUCTOR 100uH
L502	1-410-470-11	s	INDUCTOR 10uH
L503	1-410-478-11	s	INDUCTOR 47uH
L504	1-408-414-00	s	INDUCTOR 27uH
L505	1-408-413-00	s	INDUCTOR 22uH
L506	1-408-413-00	s	INDUCTOR 22uH
L507	1-408-414-00	s	INDUCTOR 27uH
L508	1-408-414-00	s	INDUCTOR 27uH
L509	1-408-414-00	s	INDUCTOR 27uH
L510	1-408-413-00	s	INDUCTOR 22uH
L511	1-408-414-00	s	INDUCTOR 27uH
L512	1-410-470-11	s	INDUCTOR 10uH
L513	1-408-413-00	s	INDUCTOR 22uH
L514	1-408-414-00	s	INDUCTOR 27uH
L601	1-410-482-31	s	INDUCTOR 100uH
L602	1-410-473-11	s	INDUCTOR 18uH
L603	1-408-424-00	s	INDUCTOR 180uH
L604	1-410-476-11	s	INDUCTOR 33uH
L605	1-410-482-31	s	INDUCTOR 100uH
L606	1-408-425-00	s	INDUCTOR 220uH
L610	1-410-476-11	s	INDUCTOR 33uH
L611	1-408-420-00	s	INDUCTOR 82uH
L612	1-408-424-00	s	INDUCTOR 180uH
L613	1-410-476-11	s	INDUCTOR 33uH
L615	1-410-478-11	s	INDUCTOR 47uH
L618	1-410-482-31	s	INDUCTOR 100uH
L619	1-410-482-31	s	INDUCTOR 100uH
L620	1-410-482-31	s	INDUCTOR 100uH
L801	1-408-419-00	s	INDUCTOR 68uH
L802	1-408-422-00	s	INDUCTOR 120uH
L803	1-408-413-00	s	INDUCTOR 22uH
L804	1-408-420-00	s	INDUCTOR 82uH
L805	1-410-473-11	s	INDUCTOR 18uH
L806	1-410-471-11	s	INDUCTOR 12uH
L807	1-408-411-00	s	INDUCTOR 15uH
L808	1-408-411-00	s	INDUCTOR 15uH
L809	1-408-621-31	s	INDUCTOR 330uH
L900	1-408-429-00	s	INDUCTOR 470uH
L901	1-410-491-11	s	INDUCTOR 560uH
PS101 ⚠	1-532-605-00	s	LINK, IC 0.4A
Q501	8-729-901-01	s	TRANSISTOR DTC144EK
Q502	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q503	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q504	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q505	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q507	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q508	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q509	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q510	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q511	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q512	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q513	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q514	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q515	8-729-903-10	s	TRANSISTOR FMW1
Q516	8-729-903-97	s	TRANSISTOR FMS1FE
Q517	8-729-903-97	s	TRANSISTOR FMS1FE
Q518	8-729-903-10	s	TRANSISTOR FMW1
Q519	8-729-907-46	s	TRANSISTOR IMZ1

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Ref. No. or Q'ty	Part No.	SP	Description
Q520	8-729-903-10	s	TRANSISTOR FMW1
Q521	8-729-903-97	s	TRANSISTOR FMS1FE
Q522	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q523	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q524	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q525	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q526	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q527	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q528	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q529	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q530	8-729-903-97	s	TRANSISTOR FMS1FE
Q531	8-729-903-10	s	TRANSISTOR FMW1
Q532	8-729-903-97	s	TRANSISTOR FMS1FE
Q533	8-729-903-10	s	TRANSISTOR FMW1
Q534	8-729-907-46	s	TRANSISTOR IMZ1
Q535	8-729-903-10	s	TRANSISTOR FMW1
Q536	8-729-903-97	s	TRANSISTOR FMS1FE
Q537	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q538	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q539	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q540	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q601	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q602	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q603	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q604	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q605	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q606	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q607	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q610	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q611	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q612	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q613	8-729-901-01	s	TRANSISTOR DTC144EK
Q614	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q615	8-729-901-01	s	TRANSISTOR DTC144EK
Q616	8-729-901-01	s	TRANSISTOR DTC144EK
Q617	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q618	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q619	8-729-901-01	s	TRANSISTOR DTC144EK
Q620	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q621	8-729-202-38	s	TRANSISTOR 2SC3326N
Q623	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q629	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q630	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q631	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q637	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q638	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q639	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q640	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q641	8-729-901-01	s	TRANSISTOR DTC144EK
Q642	8-729-901-01	s	TRANSISTOR DTC144EK
Q648	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q650	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q651	8-729-903-10	s	TRANSISTOR FMW1
Q652	8-729-901-06	s	TRANSISTOR DTA144EK
Q801	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q802	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q803	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q804	8-729-907-26	s	TRANSISTOR IMX1
Q805	8-729-903-10	s	TRANSISTOR FMW1

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Ref. No. or Q'ty	Part No.	SP	Description
Q806	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q807	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q808	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q809	8-729-903-97	s	TRANSISTOR FMS1FE
Q810	8-729-903-10	s	TRANSISTOR FMW1
Q811	8-729-903-97	s	TRANSISTOR FMS1FE
Q812	8-729-903-10	s	TRANSISTOR FMW1
Q813	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q814	8-729-907-26	s	TRANSISTOR IMX1
Q815	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q816	8-729-903-10	s	TRANSISTOR FMW1
Q817	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q818	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q819	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q820	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q821	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q822	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q823	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q824	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q825	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q826	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q827	8-729-907-26	s	TRANSISTOR IMX1
Q828	8-729-907-26	s	TRANSISTOR IMX1
Q829	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q830	8-729-907-26	s	TRANSISTOR IMX1
Q831	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q832	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q833	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q834	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q835	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q836	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q837	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q838	8-729-903-10	s	TRANSISTOR FMW1
R501	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R502	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R503	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R504	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R505	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R506	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R507	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R508	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R509	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R510	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R513	1-216-027-00	s	METAL, CHIP 120 5% 1/10W
R514	1-216-095-00	s	METAL, CHIP 82K 5% 1/10W
R515	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R516	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R517	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R519	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R520	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R521	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R522	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R523	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R524	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R525	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R526	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R527	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R528	1-216-041-00	s	METAL, CHIP 470 5% 1/10W

Ref. No. or Q'ty	Part No.	SP	Description
R529	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R530	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R531	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R532	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R533	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R534	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R535	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R536	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R537	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R538	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R539	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R540	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R541	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R542	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R543	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R544	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R545	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R546	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R547	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R548	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R549	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R550	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R551	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R552	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R553	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R554	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R555	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R556	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R557	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R558	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R559	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R560	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R561	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R562	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R563	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R564	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R565	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R566	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R567	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R568	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R569	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R570	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R571	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R572	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R573	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R574	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R575	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R576	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R577	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R578	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R579	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R580	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R581	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R582	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R583	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R584	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R585	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R586	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R587	1-216-041-00	s	METAL, CHIP 470 5% 1/10W

Ref. No. or Q'ty	Part No.	SP	Description
R588	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R589	1-216-009-00	s	METAL, CHIP 22 5% 1/10W
R590	1-216-650-11	s	METAL, CHIP 910 0.5% 1/10W
R591	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R592	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R593	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R594	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R595	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R596	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R597	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R598	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R599	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R601	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R602	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R603	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R604	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R605	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R606	1-208-784-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R607	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R608	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R609	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R610	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R611	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R612	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R613	1-216-295-91	s	RES, CHIP 0
R614	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R615	1-208-775-11	s	METAL, CHIP 510 0.5% 1/10W
R616	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R617	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R618	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R619	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R620	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R621	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R622	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R623	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R624	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R625	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R626	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R627	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R640	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R641	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R642	1-208-822-11	s	METAL, CHIP 47K 0.5% 1/10W
R643	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R644	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R645	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R646	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R647	1-208-784-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R648	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R649	1-208-806-11	s	METAL, CHIP 10K 0.5% 1/10W
R650	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R651	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R652	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R653	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R654	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R655	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R656	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R657	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R658	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R659	1-216-037-00	s	METAL, CHIP 330 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R660	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R661	1-216-043-91	s	METAL, CHIP 560 5% 1/10W
R662	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R663	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R664	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R665	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R666	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R667	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R668	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R669	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R670	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R671	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R672	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R673	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R674	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R675	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R676	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R677	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R678	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R679	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W
R680	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R681	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R682	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R683	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R684	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R685	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R686	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R687	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R688	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R689	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R690	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R693	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R694	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R695	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R696	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R697	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R698	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R699	1-216-649-11	s	METAL, CHIP 820 0.5% 1/10W
R700	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R701	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R723	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R724	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R725	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R731	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R732	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R733	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R734	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R735	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R738	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R801	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R802	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R803	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R804	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R805	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R806	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R807	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R808	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R809	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R810	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W

(CR-39 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R811	1-216-633-11	s	METAL, CHIP 180 0.5% 1/10W
R812	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R813	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R814	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R815	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R816	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R817	1-208-812-11	s	METAL, CHIP 18K 0.5% 1/10W
R818	1-208-800-11	s	METAL, CHIP 5.6K 0.5% 1/10W
R819	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R820	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R821	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R822	1-216-633-11	s	METAL, CHIP 180 0.5% 1/10W
R823	1-208-800-11	s	METAL, CHIP 5.6K 0.5% 1/10W
R824	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R825	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R826	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R827	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R828	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R829	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R830	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R831	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R832	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R833	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R834	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R835	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R836	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R837	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R838	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R839	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R840	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R841	1-216-631-11	s	METAL, CHIP 150 0.5% 1/10W
R842	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R843	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R844	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R845	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R846	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R847	1-216-625-11	s	METAL, CHIP 82 0.5% 1/10W
R848	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R849	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R850	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R851	1-216-633-11	s	METAL, CHIP 180 0.5% 1/10W
R852	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R853	1-208-800-11	s	METAL, CHIP 5.6K 0.5% 1/10W
R854	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R855	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R856	1-216-687-11	s	METAL, CHIP 33K 0.5% 1/10W
R857	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R858	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R859	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R860	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R861	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R862	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R863	1-216-633-11	s	METAL, CHIP 180 0.5% 1/10W
R864	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R865	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R866	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R867	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R868	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R869	1-208-771-11	s	METAL, CHIP 360 0.5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R870	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R871	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R872	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R873	1-208-771-11	s	METAL, CHIP 360 0.5% 1/10W
R874	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R875	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R876	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R877	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R878	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R879	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R880	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R881	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R882	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R883	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R884	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R885	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R886	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R887	1-216-637-11	s	METAL, CHIP 270 0.5% 1/10W
R888	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R889	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R890	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R891	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R892	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R893	1-216-641-11	s	METAL, CHIP 390 0.5% 1/10W
R894	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R895	1-216-047-91	s	METAL, CHIP 820 5% 1/10W
R896	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R897	1-216-649-11	s	METAL, CHIP 820 0.5% 1/10W
R898	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R899	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R900	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R901	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R902	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R903	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R904	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R905	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R906	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R907	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R910	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R911	1-216-627-11	s	METAL, CHIP 100 0.5% 1/10W
R912	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R913	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R914	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R915	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R916	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R917	1-216-695-11	s	METAL, CHIP 68K 0.5% 1/10W
R931	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R935	1-216-047-91	s	METAL, CHIP 820 5% 1/10W
R936	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R937	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R938	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R939	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R941	1-216-043-91	s	METAL, CHIP 560 5% 1/10W
R942	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R943	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R944	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R945	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R946	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R949	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R950	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R951	1-218-755-11	s	METAL, CHIP 130K 0.50% 1/10W
R952	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R953	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R954	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R955	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R956	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R957	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R958	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R959	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R960	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R961	1-216-638-11	s	METAL, CHIP 300 0.5% 1/10W
R962	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R963	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R964	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R965	1-216-697-91	s	METAL 82K 0.5% 1/10W
R966	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R967	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R970	1-208-775-11	s	METAL, CHIP 510 0.5% 1/10W
R971	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R972	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
RV501	1-241-761-11	s	RES, ADJ, METAL 1K
RV502	1-241-760-11	s	RES, ADJ, CARBON 470
RV601	1-241-761-11	s	RES, ADJ, METAL 1K
RV602	1-241-765-11	s	RES, ADJ, METAL 22K
RV603	1-238-016-11	s	RES, ADJ, CARBON 10K
RV604	1-238-019-11	s	RES, ADJ, CARBON 47K
RV606	1-241-765-11	s	RES, ADJ, METAL 22K
RV800	1-241-760-11	s	RES, ADJ, CARBON 470
RV801	1-241-760-11	s	RES, ADJ, CARBON 470
RV802	1-241-760-11	s	RES, ADJ, CARBON 470
RV860	1-241-761-11	s	RES, ADJ, METAL 1K
X601	1-567-504-11	s	CRYSTAL 4.433619MHz

DC-53A BOARD **SERIAL NO.12621 AND HIGHER**

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-314-B	o	MOUNTED CIRCUIT BOARD, DC-53A
1pc	X-3166-801-3	o	SHIELD (B) ASSY, DC BOARD
1pc	X-3166-801-1	o	SHIELD (B), DC BOARD
4pcs	1-533-189-11	s	HOLDER, FUSE
1pc	3-173-469-01	o	BUSHING, TRANSISTOR (for Q17)
1pc	3-173-478-01	o	SHIELD (A), DC BOARD
1pc	3-190-028-01	o	FILM, INSULATED (for Q17)
2pcs	4-886-821-11	s	SCREW, S TIGHT, +PTTWH 3X6
6pcs	7-621-775-40	s	SCREW +B 2.6x8
C3	1-131-368-00	s	TANTALUM 3.3uF 10% 16V
C4	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C5	1-162-714-11	s	CERAMIC 150PF 1% 50V
C6	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C7	1-126-142-11	s	ELECT 100uF 20% 35V
C8	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C9	1-111-111-11	s	ELECT 56uF 20% 25V
C10	1-124-755-00	s	ELECT 3300uF 20% 16V
C11	1-127-504-00	s	ALUMN SOLID 0.47uF 20% 25V
C12	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C13	1-131-345-00	s	TANTALUM 0.47uF 10% 35V
C14	1-126-963-11	s	ELECT 4.7uF 20% 50V
C15	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C16	1-131-368-00	s	TANTALUM 3.3uF 10% 16V
C17	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C18	1-126-142-11	s	ELECT 100uF 20% 35V
C19	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C20	1-126-090-11	s	ELECT 82uF 20% 10V
C21	1-124-568-00	s	ELECT 4700uF 20% 10V
C22	1-127-503-00	s	ALUMN SOLID 0.33uF 20% 25V
C23	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C24	1-126-373-11	s	ELECT 470uF 20% 10V
C25	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C26	1-126-373-11	s	ELECT 470uF 20% 10V
C39	1-124-489-11	s	ELECT 150uF 20% 25V
C40	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C42	1-111-035-11	s	ELECT 330uF 20% 16V
C43	1-131-347-00	s	TANTALUM 1uF 10% 35V
C101	1-126-354-11	s	ELECT 3300uF 20% 35V
C102	1-126-354-11	s	ELECT 3300uF 20% 35V
C103	1-126-354-11	s	ELECT 3300uF 20% 35V
C104	1-126-354-11	s	ELECT 3300uF 20% 35V
CN101 W	1-564-241-11	o	CONNECTOR, 4P, MALE
CN902 W	1-560-899-00	o	CONNECTOR, 11P, MALE
D1	8-719-302-37	s	DIODE RBV-602
D2	8-719-981-00	s	DIODE ERC81-004
D6	8-719-981-38	s	DIODE ERC62M-004
D9	8-719-312-47	s	DIODE RBA-406B
D10	8-719-160-59	s	DIODE RD13FB2
D11	8-719-021-25	s	DIODE UZM4.7X
D13	8-719-200-02	s	DIODE 10E2
D14	8-719-200-02	s	DIODE 10E2
IC1	8-759-937-36	s	IC TL1451ACNS
IC2	8-759-512-71	s	IC S-8054HNM
IC3	8-759-632-07	s	IC M5237L
IC4	8-759-632-07	s	IC M5237L
L1	1-408-517-00	s	COIL, CHOKE 100uH
L2	1-421-459-21	s	COIL, CHOKE 5.6uH

(DC-53A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
L3	1-414-010-11	s	COIL, CHOKE 250uH
L4	1-421-459-21	s	COIL, CHOKE 5.6uH
Q1	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q2	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q3	8-729-804-08	s	TRANSISTOR 2SA1319-S
Q4	8-729-015-21	s	TRANSISTOR 2SB1204T
Q5	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q6	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q7	8-729-901-06	s	TRANSISTOR DTA144EK
Q8	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q9	8-729-804-08	s	TRANSISTOR 2SA1319-S
Q10	8-729-112-62	s	TRANSISTOR 2SA1441-K
Q11	8-729-024-94	s	TRANSISTOR 2SB1565F
Q12	8-729-024-94	s	TRANSISTOR 2SB1565F
Q17	8-729-012-04	s	TRANSISTOR 2SC4558
Q18	8-729-901-06	s	TRANSISTOR DTA144EK
Q19	8-729-230-49	s	TRANSISTOR 2SC2712-YG
R1	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R3	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R4	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R5	1-216-101-00	s	METAL, CHIP 150K 5% 1/10W
R6	1-216-666-11	s	METAL, CHIP 4.3K 0.5% 1/10W
R7	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R8	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R9	⚠ 1-207-613-00	s	WIREWOUND 0.15 10% 3W
R10	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R11	1-216-047-91	s	METAL, CHIP 820 5% 1/10W
R12	1-216-095-00	s	METAL, CHIP 82K 5% 1/10W
R13	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R14	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R15	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R16	1-249-413-11	s	CARBON 470 5% 1/4W
R17	⚠ 1-216-341-11	s	METAL 0.22 5% 1W
R18	⚠ 1-216-341-11	s	METAL 0.22 5% 1W
R19	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R20	1-216-047-91	s	METAL, CHIP 820 5% 1/10W
R21	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W
R22	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R23	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R25	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R26	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R27	1-216-101-00	s	METAL, CHIP 150K 5% 1/10W
R28	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R29	1-208-812-11	s	METAL, CHIP 18K 0.5% 1/10W
R30	1-216-095-00	s	METAL, CHIP 82K 5% 1/10W
R31	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R32	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R33	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R34	1-247-815-91	s	CARBON 220 5% 1/4W
R35	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R36	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R37	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R38	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R39	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R40	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R41	1-216-047-91	s	METAL, CHIP 820 5% 1/10W
R42	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R43	1-216-666-11	s	METAL, CHIP 4.3K 0.5% 1/10W

(DC-53A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R59	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R60	1-216-627-11	s	METAL, CHIP 100 0.5% 1/10W
R61	1-216-295-91	s	RES, CHIP 0
R62	1-216-625-11	s	METAL, CHIP 82 0.5% 1/10W
R63	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R64	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R65	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R66	1-216-605-11	s	METAL, CHIP 12 0.5% 1/10W
R67	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R68	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
RV3	1-241-761-11	s	RES, ADJ, METAL 1K
TH1	1-800-200-00	s	THERMISTOR S-3K
TH2	1-800-200-00	s	THERMISTOR S-3K

HN-198A BOARD

SERIAL NO. 12291 AND HIGHER

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-650-152-11	o	PRINTED CIRCUIT BOARD, HN-198
1pc	3-167-013-02	o	HOLDER, ST SENSOR
1pc	3-167-028-02	o	HOLDER, LED
CN655	1-506-484-11	s	CONNECTOR 5P, MALE
CN656	1-564-013-11	o	CONNECTOR 3P, MALE
CN657	1-506-484-11	s	CONNECTOR 5P, MALE
CN658	1-506-487-11	s	CONNECTOR 8P, MALE
D1	8-719-985-00	s	LED GL451V, INFRA RED
Q1	8-729-926-31	s	PHOTOTRANSISTOR PT483F1
S1	1-570-953-11	s	SWITCH, PUSH

LE-131 BOARD

SERIAL NO. 12291 AND HIGHER

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-650-346-11	o	PRINTED CIRCUIT BOARD, LE-131
D1	8-719-821-22	s	LED TL0221, ORG

RP-62A BOARD

SERIAL NO. 11231 AND HIGHER

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-316-A	o	MOUNTED CIRCUIT BOARD, RP-62A
1pc	3-173-468-01	o	SHEET, INSULATING, RP
1pc	3-173-491-02	o	SHIELD (A), RP
1pc	3-173-492-01	o	SHIELD (B), RP
C1	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C2	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C3	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C4	1-124-589-11	s	ELECT 47uF 20% 16V
C5	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C101	1-126-163-11	s	ELECT 4.7uF 20% 50V
C102	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C103	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C104	1-124-589-11	s	ELECT 47uF 20% 16V
C105	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C106	1-124-463-00	s	ELECT 0.1uF 20% 50V
C107	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C108	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C109	1-163-089-00	s	CERAMIC, CHIP 6pF 50V
C111	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C112	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C113	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C201	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C203	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C204	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C205	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C207	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C209	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C210	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C211	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C213	1-164-346-11	s	CERAMIC, CHIP 1uF 16V
C214	1-126-153-11	s	ELECT 22uF 20% 6.3V
C216	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C217	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C218	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C219	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C220	1-163-253-11	s	CERAMIC, CHIP 120pF 5% 50V
C221	1-163-127-00	s	CERAMIC, CHIP 270pF 5% 50V
C222	1-163-131-00	s	CERAMIC, CHIP 390pF 5% 50V
C223	1-164-161-11	s	CERAMIC, CHIP 2200pF 10% 100V
C224	1-126-153-11	s	ELECT 22uF 20% 6.3V
C225	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C226	1-126-153-11	s	ELECT 22uF 20% 6.3V
C230	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C231	1-163-231-11	s	CERAMIC, CHIP 15pF 5% 50V
C232	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V
C233	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C234	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C235	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C236	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C237	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C238	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C239	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C240	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C241	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C242	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C243	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V
C244	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C245	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V
C246	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V

(RP-62A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C247	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C248	1-163-249-11	s	CERAMIC, CHIP 82pF 5% 50V
C249	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C250	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C251	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C252	1-163-231-11	s	CERAMIC, CHIP 15pF 5% 50V
C253	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C254	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C255	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C256	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C257	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C258	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C259	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C260	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C261	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C262	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C263	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C264	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C265	1-124-589-11	s	ELECT 47uF 20% 16V
C266	1-163-085-00	s	CERAMIC, CHIP 2pF 50V
C267	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C270	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C272	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C273	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C274	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C275	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C301	1-124-589-11	s	ELECT 47uF 20% 16V
C302	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C303	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C304	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C305	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C306	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C307	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C308	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C319	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C320	1-163-143-00	s	CERAMIC, CHIP 0.0012uF 5% 50V
C323	1-124-463-00	s	ELECT 0.1uF 20% 50V
C324	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C325	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C326	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C327	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C328	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C329	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C330	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C331	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C332	1-126-160-11	s	ELECT 1uF 20% 50V
C333	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C334	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C335	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C336	1-163-275-11	s	CERAMIC, CHIP 1000pF 5% 50V
C337	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C339	1-126-157-11	s	ELECT 10uF 20% 16V
C340	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C341	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C342	1-126-163-11	s	ELECT 4.7uF 20% 50V
C350	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C351	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C352	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C353	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V

(RP-62A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C354	1-126-163-11	s	ELECT 4.7uF 20% 50V
C355	1-124-589-11	s	ELECT 47uF 20% 16V
C356	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
CN801 B	1-563-590-11	o	CONNECTOR, FPC 13P, FEMALE
CN802 W	1-506-486-11	s	CONNECTOR, 7P, MALE
CN803 R	1-506-485-11	s	CONNECTOR, 6P, MALE
CN804 W	1-564-031-00	o	CONNECTOR, 6P, MALE
CN805 Y	1-506-485-11	s	CONNECTOR, 6P, MALE
CN806 W	1-506-484-11	s	CONNECTOR, 5P, MALE
CN807 W	1-506-485-11	s	CONNECTOR, 6P, MALE
CN808 W	1-564-013-11	o	CONNECTOR, 3P, MALE
D201	8-719-801-78	s	DIODE 1SS184
D202	8-719-801-78	s	DIODE 1SS184
D203	8-719-801-78	s	DIODE 1SS184
D301	8-719-801-78	s	DIODE 1SS184
DL201	1-415-858-11	s	DELAY LINE 35nS
DL202	1-415-858-11	s	DELAY LINE 35nS
IC101	8-759-420-60	s	IC AN6392L
IC201	8-759-320-52	s	IC HA118019NT
IC202	8-759-012-00	s	IC MC10H116M
IC301	8-759-320-55	s	IC HA12115MP
IC302	8-759-998-32	s	IC CXD2107M
L101	1-408-968-21	s	INDUCTOR 6.8uH
L102	1-410-149-11	s	INDUCTOR 39uH (SHIELD TYPE)
L103	1-408-982-11	s	INDUCTOR 100uH
L200	1-408-982-11	s	INDUCTOR 100uH
L201	1-408-948-00	s	INDUCTOR 220uH
L202	1-408-976-21	s	INDUCTOR 33uH
L203	1-408-971-21	s	INDUCTOR 12uH
L204	1-408-977-21	s	INDUCTOR 39uH
L205	1-408-948-00	s	INDUCTOR 220uH
L206	1-408-970-21	s	INDUCTOR 10uH
L207	1-408-978-21	s	INDUCTOR 47uH
L208	1-408-973-21	s	INDUCTOR 18uH
L209	1-408-978-21	s	INDUCTOR 47uH
L210	1-408-982-11	s	INDUCTOR 100uH
L211	1-408-982-11	s	INDUCTOR 100uH
L212	1-408-974-21	s	INDUCTOR 22uH
L213	1-408-982-11	s	INDUCTOR 100uH
L214	1-408-972-21	s	INDUCTOR 15uH
L215	1-408-970-21	s	INDUCTOR 10uH
L301	1-408-989-21	s	INDUCTOR 470uH
L302	1-410-140-11	s	INDUCTOR 6.8uH (SHIELD TYPE)
L303	1-408-982-11	s	INDUCTOR 100uH
L304	1-408-982-11	s	INDUCTOR 100uH
L305	1-408-982-11	s	INDUCTOR 100uH
L306	1-408-970-21	s	INDUCTOR 10uH
Q101	8-729-202-38	s	TRANSISTOR 2SC3326N
Q102	8-729-901-01	s	TRANSISTOR DTC144EK
Q103	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q104	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q105	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q201	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q202	8-729-901-01	s	TRANSISTOR DTC144EK
Q203	8-729-901-01	s	TRANSISTOR DTC144EK
Q204	8-729-901-01	s	TRANSISTOR DTC144EK
Q210	8-729-230-49	s	TRANSISTOR 2SC2712-YG

(RP-62A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q211	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q212	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q213	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q214	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q215	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q216	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q217	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q218	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q219	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q220	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q221	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q222	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q223	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q301	8-729-901-01	s	TRANSISTOR DTC144EK
Q302	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q303	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q304	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q310	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q311	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q312	8-729-901-01	s	TRANSISTOR DTC144EK
Q313	8-729-901-01	s	TRANSISTOR DTC144EK
Q314	8-729-901-06	s	TRANSISTOR DTA144EK
Q315	8-729-901-01	s	TRANSISTOR DTC144EK
R101	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R102	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R103	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R104	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R105	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R106	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R107	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R108	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R109	1-216-043-91	s	METAL, CHIP 560 5% 1/10W
R110	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R111	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R112	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R113	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R114	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R115	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R116	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R117	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R118	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R120	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R121	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R201	1-216-632-11	s	METAL, CHIP 160 0.5% 1/10W
R202	1-216-630-11	s	METAL, CHIP 130 0.5% 1/10W
R203	1-216-630-11	s	METAL, CHIP 130 0.5% 1/10W
R204	1-216-629-11	s	METAL, CHIP 120 0.5% 1/10W
R205	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R206	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R207	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R208	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R209	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R210	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R211	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R212	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R213	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R214	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R215	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W

(RP-62A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R216	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R217	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R218	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R219	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R220	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R221	1-216-295-91	s	RES, CHIP 0
R230	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R231	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R232	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R233	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R234	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R235	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R236	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R237	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R238	1-216-043-91	s	METAL, CHIP 560 5% 1/10W
R239	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R240	1-216-043-91	s	METAL, CHIP 560 5% 1/10W
R241	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R242	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R243	1-216-043-91	s	METAL, CHIP 560 5% 1/10W
R244	1-216-047-91	s	METAL, CHIP 820 5% 1/10W
R245	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R246	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R247	1-216-047-91	s	METAL, CHIP 820 5% 1/10W
R248	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R249	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R250	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R251	1-216-039-00	s	METAL, CHIP 390 5% 1/10W
R252	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R253	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R254	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R255	1-216-043-91	s	METAL, CHIP 560 5% 1/10W
R256	1-216-047-91	s	METAL, CHIP 820 5% 1/10W
R257	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R258	1-216-043-91	s	METAL, CHIP 560 5% 1/10W
R259	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R260	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R261	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R262	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R263	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R264	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R265	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R266	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R267	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R268	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R269	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R270	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R271	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R272	1-216-043-91	s	METAL, CHIP 560 5% 1/10W
R273	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R274	1-216-043-91	s	METAL, CHIP 560 5% 1/10W
R275	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R276	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R277	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R278	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R279	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R280	1-208-767-11	s	METAL, CHIP 240 0.5% 1/10W
R281	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R282	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R283	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R284	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R285	1-208-767-11	s	METAL, CHIP 240 0.5% 1/10W
R286	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R287	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R288	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R289	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R290	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R291	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R292	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R293	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R294	1-208-799-11	s	METAL, CHIP 5.1K 0.5% 1/10W
R301	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R302	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R303	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R304	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R305	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R306	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R308	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R309	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R320	1-216-019-00	s	METAL, CHIP 56 5% 1/10W
R322	1-216-001-00	s	METAL, CHIP 10 5% 1/10W
R323	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R324	1-216-304-11	s	METAL, CHIP 3.3 5% 1/10W
R325	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R327	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R328	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R329	1-216-304-11	s	METAL, CHIP 3.3 5% 1/10W
R330	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R331	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R340	1-216-047-91	s	METAL, CHIP 820 5% 1/10W
R341	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R342	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R343	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R344	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R345	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R346	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R348	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W

SE-224 BOARD **SERIAL NO. 12291 AND HIGHER**

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-650-153-11	o	PRINTED CIRCUIT BOARD, SE-224
1pc	3-167-013-02	o	HOLDER, ST SENSOR
CN601	1-506-467-11	s	CONNECTOR 2P, MALE
Q1	8-729-926-31	s	PHOTOTRANSISTOR PT483F1S

SE-230 BOARD **SERIAL NO. 12291 AND HIGHER**

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-650-347-11	o	PRINTED CIRCUIT BOARD, SE-230
PC1	1-806-232-21	s	DETECTOR MB-1102/S.N

SS-49A BOARD **SERIAL NO.11081 AND HIGHER**

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-315-C	o	MOUNTED CIRCUIT BOARD, SS-49A
3pcs	3-682-057-01	s	SPACER (SMALL)
2pcs	4-924-098-31	o	HOLDER, PC BOARD
2pcs	4-886-821-11	s	SCREW, M3 CASE
C101	1-126-933-11	s	ELECT 100uF 20% 16V
C102	1-126-935-11	s	ELECT 470uF 20% 16V
C103	1-125-498-11	s	DOUBLE LAYERS 1.0F 5.5V
C104	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C105	1-124-234-00	s	ELECT 22uF 20% 16V
C106	1-126-933-11	s	ELECT 100uF 20% 16V
C107	1-126-791-11	s	ELECT 10uF 20% 16V
C108	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C109	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C110	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C111	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C113	1-124-589-11	s	ELECT 47uF 20% 16V
C115	1-124-589-11	s	ELECT 47uF 20% 16V
C118	1-124-234-00	s	ELECT 22uF 20% 16V
C119	1-124-257-00	s	ELECT 2.2uF 20% 50V
C120	1-163-141-00	s	CERAMIC, CHIP 1000pF 5% 50V
C121	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C122	1-163-231-11	s	CERAMIC, CHIP 15pF 5% 50V
C123	1-163-231-11	s	CERAMIC, CHIP 15pF 5% 50V
C124	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C125	1-130-471-00	s	MYLAR 1000pF 5% 50V
C129	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C130	1-130-471-00	s	MYLAR 1000pF 5% 50V
C139	1-124-589-11	s	ELECT 47uF 20% 16V
C140	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C141	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C142	1-124-589-11	s	ELECT 47uF 20% 16V
C143	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C144	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C146	1-124-589-11	s	ELECT 47uF 20% 16V
C147	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C148	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C149	1-126-791-11	s	ELECT 10uF 20% 16V
C150	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C154	1-130-471-00	s	MYLAR 1000pF 5% 50V
C155	1-126-162-11	s	ELECT 3.3uF 20% 50V
C156	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C157	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C167	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C168	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C169	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C170	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C171	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C180	1-126-163-11	s	ELECT 4.7uF 20% 50V
C301	1-124-589-11	s	ELECT 47uF 20% 16V
C302	1-126-162-11	s	ELECT 3.3uF 20% 50V
C303	1-126-162-11	s	ELECT 3.3uF 20% 50V
C304	1-126-791-11	s	ELECT 10uF 20% 16V
C305	1-126-791-11	s	ELECT 10uF 20% 16V
C306	1-126-162-11	s	ELECT 3.3uF 20% 50V
C307	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C308	1-124-589-11	s	ELECT 47uF 20% 16V
C309	1-124-589-11	s	ELECT 47uF 20% 16V
C310	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C311	1-124-242-00	s	ELECT 33uF 20% 25V

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Ref. No. or Q'ty	Part No.	SP	Description
C312	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C313	1-124-242-00	s	ELECT 33uF 20% 25V
C314	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C315	1-124-242-00	s	ELECT 33uF 20% 25V
C316	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C317	1-124-242-00	s	ELECT 33uF 20% 25V
C320	1-124-589-11	s	ELECT 47uF 20% 16V
C321	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C322	1-163-131-00	s	CERAMIC, CHIP 390pF 5% 50V
C323	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C324	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C325	1-164-004-11	s	CERAMIC, CHIP 0.1uF 10% 25V
C326	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C327	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C328	1-126-933-11	s	ELECT 100uF 20% 16V
C329	1-163-017-00	s	CERAMIC, CHIP 4700pF 10% 50V
C330	1-126-934-11	s	ELECT 220uF 20% 16V
C331	1-164-004-11	s	CERAMIC, CHIP 0.1uF 10% 25V
C332	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C333	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C334	1-126-933-11	s	ELECT 100uF 20% 16V
C335	1-163-017-00	s	CERAMIC, CHIP 4700pF 10% 50V
C336	1-126-934-11	s	ELECT 220uF 20% 16V
C337	1-126-768-11	s	ELECT 2200uF 20% 16V
C338	1-124-589-11	s	ELECT 47uF 20% 16V
C339	1-124-465-00	s	ELECT 0.47uF 20% 50V
C340	1-124-465-00	s	ELECT 0.47uF 20% 50V
C341	1-163-104-00	s	CERAMIC, CHIP 30pF 5% 50V
C342	1-163-104-00	s	CERAMIC, CHIP 30pF 5% 50V
C343	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C344	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C345	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C346	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C347	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C348	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C349	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C351	1-124-465-00	s	ELECT 0.47uF 20% 50V
C352	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C353	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C354	1-126-160-11	s	ELECT 1uF 20% 50V
C355	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C363	1-126-933-11	s	ELECT 100uF 20% 16V
C364	1-126-933-11	s	ELECT 100uF 20% 16V
C365	1-126-933-11	s	ELECT 100uF 20% 16V
C366	1-126-933-11	s	ELECT 100uF 20% 16V
C367	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C515	1-130-471-00	s	MYLAR 1000pF 5% 50V
C516	1-130-471-00	s	MYLAR 1000pF 5% 50V
C518	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C519	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C520	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C521	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C522	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C523	1-124-589-11	s	ELECT 47uF 20% 16V
C524	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C525	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C526	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C527	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C528	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V

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Ref. No. or Q'ty	Part No.	SP	Description
C529	1-126-933-11	s	ELECT 100uF 20% 16V
C530	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C536	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C537	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C538	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C539	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C540	1-124-589-11	s	ELECT 47uF 20% 16V
C545	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C546	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C547	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C548	1-126-516-11	s	ELECT 120uF 20% 16V
C601	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C602	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C603	1-126-160-11	s	ELECT 1uF 20% 50V
C604	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C605	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C606	1-126-933-11	s	ELECT 100uF 20% 16V
C607	1-126-163-11	s	ELECT 4.7uF 20% 50V
C670	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
CN100 W	1-560-899-00	o	CONNECTOR, 11P, MALE
CN101 W	1-563-461-11	o	CONNECTOR, FPC 28P, FEMALE
CN102 Y	1-506-473-11	o	CONNECTOR, 8P, MALE
CN103 B	1-506-470-11	s	CONNECTOR, 5P, MALE
CN105 W	1-506-468-11	s	CONNECTOR, 3P, MALE
CN106 W	1-506-467-11	s	CONNECTOR, 2P, MALE
CN107 W	1-564-002-11	s	CONNECTOR, 3P, MALE
CN108 W	1-506-467-11	s	CONNECTOR, 2P, MALE
CN110 R	1-506-477-11	s	CONNECTOR, 12P, MALE
CN111 R	1-506-474-11	s	CONNECTOR, 9P, MALE
CN114 W	1-506-476-11	s	CONNECTOR, 11P, MALE
CN116 Y	1-506-478-11	s	CONNECTOR, 13P, MALE
CN117 B	1-506-469-11	s	CONNECTOR, 4P, MALE
CN118 R	1-506-468-11	s	CONNECTOR, 3P, MALE
CN123 W	1-506-474-11	s	CONNECTOR, 9P, MALE
CN124	1-506-474-11	s	CONNECTOR, 9P, MALE
CN130 B	1-506-471-11	s	CONNECTOR, 6P, MALE
CN131 B	1-506-475-11	s	CONNECTOR, 10P, MALE
CN132 R	1-506-471-11	s	CONNECTOR, 6P, MALE
CN133 B	1-506-468-11	s	CONNECTOR, 3P, MALE
CN134 W	1-562-883-11	o	CONNECTOR, FPC 20P, FEMALE
CN140 W	1-506-472-11	s	CONNECTOR, 7P, MALE
CN142 W	1-506-476-11	s	CONNECTOR, 11P, MALE
CN810	1-691-271-11	s	CONNECTOR, 10P, MALE
CN811	1-691-271-11	s	CONNECTOR, 10P, MALE
D101	8-719-911-19	s	DIODE 1SS119
D102	8-719-104-34	s	DIODE 1S2836
D104	8-719-200-02	s	DIODE 10E2
D105	8-719-200-02	s	DIODE 10E2
D108	8-719-938-75	s	DIODE SB05-05CP
D112	8-719-109-68	s	DIODE RD3.6ESB1
D113	8-719-104-34	s	DIODE 1S2836
D116	8-719-109-84	s	DIODE RD5.1ESB1
D119	8-719-911-19	s	DIODE 1SS119
D120	8-719-104-34	s	DIODE 1S2836
D301	8-719-800-76	s	DIODE 1SS226
D302	8-719-911-19	s	DIODE 1SS119
D303	8-719-106-16	s	DIODE RD6.8M-B1
D308	8-719-801-78	s	DIODE 1SS184
D310	8-719-106-43	s	DIODE RD9.1M-B1

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Ref. No. or Q'ty	Part No.	SP	Description
D311	8-719-981-00	s	DIODE ERC81-004
D312	8-719-981-00	s	DIODE ERC81-004
D313	8-719-200-02	s	DIODE 10E2
D314	8-719-200-02	s	DIODE 10E2
D315	8-719-801-78	s	DIODE 1SS184
D316	8-719-106-16	s	DIODE RD6.8M-B1
D317	8-719-160-68	s	DIODE RD18FB2
D318	8-719-160-68	s	DIODE RD18FB2
D319	8-719-801-78	s	DIODE 1SS184
D320	8-719-911-19	s	DIODE 1SS119
D321	8-719-800-76	s	DIODE 1SS226
D326	8-719-110-16	s	DIODE RD10ESB1
D327	8-719-200-02	s	DIODE 10E2
D328	8-719-200-02	s	DIODE 10E2
D329	8-719-200-02	s	DIODE 10E2
D505	8-719-104-34	s	DIODE 1S2836
D506	8-719-104-34	s	DIODE 1S2836
D508	8-719-104-34	s	DIODE 1S2836
D509	8-719-104-34	s	DIODE 1S2836
IC101	8-752-863-86	s	IC CXP80624-496Q
IC102	8-759-720-81	s	IC M6M80011AP
IC103	8-759-981-96	s	IC RC4560D
IC104	8-759-512-71	s	IC S-8054HNM
IC106	8-759-981-96	s	IC RC4560D
IC107	8-759-729-03	s	IC NJM2903D
IC108	8-759-135-80	s	IC uPC358C
IC109	8-759-983-45	s	IC BA6238A
IC111	8-759-140-53	s	IC MC14053BCP
IC112	8-759-711-41	s	IC NJM2220S
IC114	8-759-917-43	s	IC SN74HC138AN
IC115	8-759-202-61	s	IC TC4094RS
IC116	8-759-512-71	s	IC S-8054HNM
IC301	8-759-912-77	s	IC LM324N
IC302	8-759-912-77	s	IC LM324N
IC303	8-759-140-53	s	IC MC14053BCP
IC304	8-759-984-03	s	IC LM339N
IC305	8-759-729-03	s	IC NJM2903D
IC306	8-759-091-41	s	IC UPD75108CW-W27
IC309	8-759-729-03	s	IC NJM2903D
IC310	8-759-135-80	s	IC uPC358C
IC311	8-759-912-77	s	IC LM324N
IC312	8-759-135-80	s	IC uPC358C
IC314	8-759-140-53	s	IC MC14053BCP
IC315	8-759-140-53	s	IC MC14053BCP
IC503	8-759-708-05	s	IC NJM78L05A
IC504	8-759-916-20	s	IC SN74HC14AN
IC505	8-759-981-96	s	IC RC4560D
IC506	8-759-040-70	s	IC MC14070BCP
IC508	8-759-340-13	s	IC HD14013BP
IC509	8-759-981-96	s	IC RC4560D
IC510	8-759-140-53	s	IC MC14053BCP
IC512	8-759-140-53	s	IC MC14053BCP
IC513	8-759-729-03	s	IC NJM2903D
IC514	8-759-981-96	s	IC RC4560D
IC601	8-759-729-03	s	IC NJM2903D
L101	1-410-482-31	s	INDUCTOR 100uH
L301	1-408-519-00	s	COIL, CHOKE 420uH
L302	1-408-519-00	s	COIL, CHOKE 420uH

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Ref. No. or Q'ty	Part No.	SP	Description
PS101⚠	1-532-685-00	s	LINK, IC 0.8A
PS105⚠	1-532-637-00	s	LINK, IC 1.0A
PS301⚠	1-532-685-00	s	LINK, IC 0.8A
Q101	8-729-024-94	s	TRANSISTOR 2SB1565F
Q102	8-729-901-01	s	TRANSISTOR DTC144EK
Q103	8-729-901-06	s	TRANSISTOR DTA144EK
Q104	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q107	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q108	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q109	8-729-119-77	s	TRANSISTOR 2SA1175-FEK
Q110	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q114	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q115	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q116	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q117	8-729-901-00	s	TRANSISTOR DTC124EK
Q118	8-729-901-00	s	TRANSISTOR DTC124EK
Q119	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q120	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q121	8-729-901-01	s	TRANSISTOR DTC144EK
Q128	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q129	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q130	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q131	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q134	8-729-901-01	s	TRANSISTOR DTC144EK
Q301	8-729-901-01	s	TRANSISTOR DTC144EK
Q302	8-729-901-01	s	TRANSISTOR DTC144EK
Q303	8-729-901-01	s	TRANSISTOR DTC144EK
Q304	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q305	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q306	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q307	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q308	8-729-804-87	s	TRANSISTOR 2SB1142-T
Q309	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q310	8-729-804-87	s	TRANSISTOR 2SB1142-T
Q311	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q312	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q313	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q314	8-729-378-84	s	TRANSISTOR 2SD788
Q315	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q316	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q317	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q318	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q319	8-729-378-84	s	TRANSISTOR 2SD788
Q320	8-729-901-01	s	TRANSISTOR DTC144EK
Q321	8-729-901-01	s	TRANSISTOR DTC144EK
Q322	8-729-901-01	s	TRANSISTOR DTC144EK
Q323	8-729-202-38	s	TRANSISTOR 2SC3326N
Q331	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q332	8-729-901-01	s	TRANSISTOR DTC144EK
Q333	8-729-901-01	s	TRANSISTOR DTC144EK
Q334	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q335	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q336	8-729-901-01	s	TRANSISTOR DTC144EK
Q337	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q338	8-729-378-84	s	TRANSISTOR 2SD788
Q340	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q341	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q342	8-729-378-84	s	TRANSISTOR 2SD788

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Ref. No. or Q'ty	Part No.	SP	Description
Q346	8-729-889-40	s	TRANSISTOR 2SD894
Q347	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q348	8-729-811-11	s	TRANSISTOR 2SD1111
Q349	8-729-901-06	s	TRANSISTOR DTA144EK
Q350	8-729-901-01	s	TRANSISTOR DTC144EK
Q351	8-729-901-01	s	TRANSISTOR DTC144EK
Q352	8-729-900-52	s	TRANSISTOR DTC114YK
Q506	8-729-105-73	s	TRANSISTOR 2SK523-L2
Q507	8-729-901-01	s	TRANSISTOR DTC144EK
Q510	8-729-901-01	s	TRANSISTOR DTC144EK
Q516	8-729-901-01	s	TRANSISTOR DTC144EK
R101	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R102	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R103	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R104	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R105	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R106	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R107	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R108	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R109	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R110	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R111	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R112	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R114	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R115	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R116	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R119	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R120	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R121	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R123	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R124	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R125	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R126	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R127	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R128	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R129	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R130	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R131	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R132	1-216-105-91	s	METAL, CHIP 220K 5% 1/10W
R133	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R134	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R135	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R136	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R137	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R138	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R139	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R140	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R141	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R142	1-216-105-91	s	METAL, CHIP 220K 5% 1/10W
R143	1-216-105-91	s	METAL, CHIP 220K 5% 1/10W
R144	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R145	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R146	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R147	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R148	1-216-105-91	s	METAL, CHIP 220K 5% 1/10W
R149	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R150	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R151	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R152	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R153	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R154	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R155	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R156	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R157	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R158	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R159	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R160	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R161	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R162	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R163	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R164	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R165	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R166	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R167	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R168	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R169	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R170	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R171	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R172	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R173	1-216-105-91	s	METAL, CHIP 220K 5% 1/10W
R174	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R175	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R176	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R177	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R178	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R179	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R180	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R181	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R182	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R183	1-216-105-91	s	METAL, CHIP 220K 5% 1/10W
R184	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R185	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R186	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R187	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R188	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R194	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R195	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R196	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R197	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R198	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R199	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R200	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R201	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R202	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R203	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R204	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R205	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R206	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R207	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R208	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R209	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R210	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R211	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R212	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R213	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R214	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R215	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R217	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R218	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R219	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R220	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R221	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R222	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R223	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R224	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R226	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R227	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R228	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R229	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R230	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R231	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R232	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R233	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R234	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R235	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R236	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R237	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R238	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R239	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R240	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R241	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R242	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R243	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R245	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R247	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R250	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R255	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R268	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R269	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R270	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R271	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R272	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R273	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R274	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R275	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R276	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R277	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R278	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R280	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R281	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R282	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R283	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R284	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R285	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R289	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R290	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R291	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R292	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R293	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R299	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R301	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R302	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R303	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R304	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R305	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R306	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R307	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R309	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R310	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R311	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R312	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R313	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R314	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R315	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R316	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R317	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R318	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R319	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R320	1-216-031-00	s	METAL, CHIP 180 5% 1/10W
R321	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R322	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R324	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R325	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R326	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R328	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R329	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R330	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R332	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R333	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R334	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R336	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R337	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R338	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R340	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R341	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R345	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R346	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R349	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R350	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R351	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R352	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R353	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R354	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R355	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R356	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R357	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R358	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R359	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R360	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R361	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R362	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R363	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R364	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R366	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R367	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R368	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R370	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R371	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R372	1-216-105-91	s	METAL, CHIP 220K 5% 1/10W
R373	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R375	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R376	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R377	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R378	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R379	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W

(SS-49A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R380	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R381	⚠ 1-216-365-00	s	METAL 0.47 5% 2W
R383	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R384	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R385	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R387	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R388	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R389	1-216-105-91	s	METAL, CHIP 220K 5% 1/10W
R390	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R392	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R393	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R394	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R395	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R396	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R397	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R398	⚠ 1-216-365-00	s	METAL 0.47 5% 2W
R399	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R400	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R401	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R402	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R403	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R404	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R405	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R406	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R407	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R408	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R409	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R410	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R411	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R412	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R413	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R414	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R415	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R416	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R417	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R418	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R419	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R420	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R421	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R422	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R423	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R424	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R425	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R426	1-208-817-11	s	METAL, CHIP 30K 0.5% 1/10W
R427	1-208-810-11	s	METAL, CHIP 15K 0.5% 1/10W
R428	1-208-817-11	s	METAL, CHIP 30K 0.5% 1/10W
R429	1-208-810-11	s	METAL, CHIP 15K 0.5% 1/10W
R430	1-208-817-11	s	METAL, CHIP 30K 0.5% 1/10W
R431	1-208-810-11	s	METAL, CHIP 15K 0.5% 1/10W
R432	1-208-817-11	s	METAL, CHIP 30K 0.5% 1/10W
R433	1-208-810-11	s	METAL, CHIP 15K 0.5% 1/10W
R434	1-208-817-11	s	METAL, CHIP 30K 0.5% 1/10W
R435	1-208-810-11	s	METAL, CHIP 15K 0.5% 1/10W
R436	1-208-817-11	s	METAL, CHIP 30K 0.5% 1/10W
R437	1-208-810-11	s	METAL, CHIP 15K 0.5% 1/10W
R438	1-208-817-11	s	METAL, CHIP 30K 0.5% 1/10W
R439	1-208-810-11	s	METAL, CHIP 15K 0.5% 1/10W
R440	1-208-817-11	s	METAL, CHIP 30K 0.5% 1/10W
R441	1-208-817-11	s	METAL, CHIP 30K 0.5% 1/10W

(SS-49A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R442	1-208-817-11	s	METAL, CHIP 30K 0.5% 1/10W
R443	1-208-810-11	s	METAL, CHIP 15K 0.5% 1/10W
R444	1-208-817-11	s	METAL, CHIP 30K 0.5% 1/10W
R445	1-208-810-11	s	METAL, CHIP 15K 0.5% 1/10W
R446	1-208-817-11	s	METAL, CHIP 30K 0.5% 1/10W
R447	1-208-810-11	s	METAL, CHIP 15K 0.5% 1/10W
R448	1-208-817-11	s	METAL, CHIP 30K 0.5% 1/10W
R449	1-208-810-11	s	METAL, CHIP 15K 0.5% 1/10W
R450	1-208-817-11	s	METAL, CHIP 30K 0.5% 1/10W
R451	1-208-810-11	s	METAL, CHIP 15K 0.5% 1/10W
R452	1-208-817-11	s	METAL, CHIP 30K 0.5% 1/10W
R453	1-208-810-11	s	METAL, CHIP 15K 0.5% 1/10W
R454	1-208-817-11	s	METAL, CHIP 30K 0.5% 1/10W
R455	1-208-810-11	s	METAL, CHIP 15K 0.5% 1/10W
R456	1-208-817-11	s	METAL, CHIP 30K 0.5% 1/10W
R457	1-208-817-11	s	METAL, CHIP 30K 0.5% 1/10W
R458	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R459	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R460	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R461	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R462	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R463	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R464	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R465	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R466	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R467	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R468	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R469	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R470	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R471	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R472	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R473	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R474	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R475	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R476	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R477	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R478	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R479	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R480	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R481	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R482	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R483	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R485	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R486	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R487	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R488	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R489	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R490	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R491	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R492	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R493	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R494	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R495	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R496	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R497	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R498	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R499	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R531	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R532	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W

(SS-49A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R533	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R535	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R536	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R537	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R538	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R539	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R540	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R541	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R542	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R543	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R544	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R546	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R548	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R549	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R550	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R551	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R552	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R553	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R554	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R555	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R556	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R557	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R558	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R559	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R560	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R561	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R562	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R563	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R568	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R569	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R570	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R571	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R572	1-216-105-91	s	METAL, CHIP 220K 5% 1/10W
R573	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R574	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R575	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R576	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R577	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R578	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R600	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R601	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R602	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R603	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R604	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R605	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R606	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R607	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R609	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R610	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R616	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R617	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R618	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R632	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R633	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R634	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R635	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R636	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R637	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R638	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R640	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R641	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R642	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R643	1-216-047-91	s	METAL, CHIP 820 5% 1/10W
R644	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R646	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R647	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R648	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R650	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R651	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R652	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
RB101	1-235-196-00	s	RES BLOCK 100K x8
RB301	1-235-195-00	s	RES BLOCK 10K x8
RV101	1-241-767-21	s	RES, ADJ, CARBON 100K
RV102	1-228-477-00	s	RES, ADJ, METAL 100K
RV301	1-241-785-11	s	RES, ADJ, METAL 10K
RV302	1-241-785-11	s	RES, ADJ, METAL 10K
RV303	1-241-761-11	s	RES, ADJ, METAL 1K
RV304	1-241-761-11	s	RES, ADJ, METAL 1K
RV305	1-241-785-11	s	RES, ADJ, METAL 10K
RV500	1-241-785-11	s	RES, ADJ, METAL 10K
RV502	1-241-785-11	s	RES, ADJ, METAL 10K
RV503	1-241-785-11	s	RES, ADJ, METAL 10K
S101	1-570-623-11	s	SWITCH, DIP 8-CKT
X101	1-567-962-11	s	CRYSTAL 8.00MHz
X301	1-567-192-11	s	RESONATOR, CERAMIC 4.00MHz
X500	1-577-358-21	s	RESONATOR, CERAMIC 4.00MHz

SW-668 BOARD

SERIAL NO. 12291 AND HIGHER

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-650-155-11	o	PRINTED CIRCUIT BOARD, SW-668
S2	1-570-953-11	s	SWITCH, PUSH

SW-673 BOARD

SERIAL NO. 12291 AND HIGHER

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-650-382-11	o	PRINTED CIRCUIT BOARD, SW-673
S3	1-570-953-11	s	SWITCH, PUSH

VM-12P BOARD **SERIAL NO. 15191 AND HIGHER**

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-317-D	o	MOUNTED CIRCUIT BOARD, VM-12P
1pc	X-3166-759-1	o	SHIELD (B) ASSY, VM BOARD
1pc	3-173-466-01	o	SHEET, INSULATING, VM BOARD
1pc	3-173-489-01	o	SHIELD (A), VM BOARD
1pc	3-173-490-01	o	SHIELD (B), VM BOARD
C10	1-124-584-00	s	ELECT 100uF 20% 10V
C13	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C16	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C17	1-124-589-11	s	ELECT 47uF 20% 16V
C30	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C31	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C34	1-163-110-00	s	CERAMIC, CHIP 51pF 5% 50V
C35	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C37	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C38	1-124-589-11	s	ELECT 47uF 20% 16V
C39	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C50	1-124-584-00	s	ELECT 100uF 20% 10V
C51	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C52	1-126-791-11	s	ELECT 10uF 20% 16V
C53	1-126-791-11	s	ELECT 10uF 20% 16V
C54	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C100	1-131-350-00	s	TANTALUM 3.3uF 10% 35V
C102	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C105	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C106	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C107	1-124-584-00	s	ELECT 100uF 20% 10V
C108	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C109	1-162-587-11	s	CERAMIC, CHIP 0.039uF 10% 25V
C110	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C120	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C123	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C124	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C125	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C126	1-124-584-00	s	ELECT 100uF 20% 10V
C127	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C128	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C130	1-131-345-00	s	TANTALUM 0.47uF 10% 35V
C140	1-164-346-11	s	CERAMIC, CHIP 1uF 16V
C141	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C142	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C143	1-163-105-00	s	CERAMIC, CHIP 33pF 5% 50V
C144	1-163-105-00	s	CERAMIC, CHIP 33pF 5% 50V
C145	1-115-871-11	s	ELECT 1uF 20% 50V
C190	1-124-584-00	s	ELECT 100uF 20% 10V
C191	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C192	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C193	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C194	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C195	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C200	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C202	1-115-871-11	s	ELECT 1uF 20% 50V
C220	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C230	1-126-791-11	s	ELECT 10uF 20% 16V
C231	1-164-182-11	s	CERAMIC, CHIP 3300pF 10% 100V
C232	1-115-873-91	s	ELECT 3.3uF 20% 50V
C234	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C235	1-163-014-00	s	CERAMIC 0.0027uF 10% 50V
C236	1-163-098-00	s	CERAMIC, CHIP 16pF 5% 50V
C250	1-163-275-11	s	CERAMIC, CHIP 1000pF 5% 50V

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Ref. No. or Q'ty	Part No.	SP	Description
C252	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C254	1-124-589-11	s	ELECT 47uF 20% 16V
C258	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C260	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C261	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C271	1-163-127-00	s	CERAMIC, CHIP 270pF 5% 50V
C272	1-163-139-00	s	CERAMIC, CHIP 820pF 5% 50V
C290	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C291	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C292	1-124-584-00	s	ELECT 100uF 20% 10V
C293	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C300	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C301	1-124-589-11	s	ELECT 47uF 20% 16V
C302	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C303	1-124-589-11	s	ELECT 47uF 20% 16V
C304	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C305	1-124-589-11	s	ELECT 47uF 20% 16V
C306	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C307	1-124-589-11	s	ELECT 47uF 20% 16V
C308	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C309	1-124-589-11	s	ELECT 47uF 20% 16V
C310	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C311	1-124-589-11	s	ELECT 47uF 20% 16V
C312	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C313	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C314	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C315	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C316	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C317	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C350	1-163-275-11	s	CERAMIC, CHIP 1000pF 5% 50V
C351	1-163-275-11	s	CERAMIC, CHIP 1000pF 5% 50V
C400	1-124-584-00	s	ELECT 100uF 20% 10V
C401	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C402	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C403	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C488	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C489	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C490	1-124-589-11	s	ELECT 47uF 20% 16V
C491	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C492	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C493	1-124-584-00	s	ELECT 100uF 20% 10V
C494	1-124-584-00	s	ELECT 100uF 20% 10V
C495	1-124-584-00	s	ELECT 100uF 20% 10V
C496	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C497	1-124-584-00	s	ELECT 100uF 20% 10V
C498	1-124-584-00	s	ELECT 100uF 20% 10V
C499	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C551	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C552	1-163-105-00	s	CERAMIC, CHIP 33pF 5% 50V
C555	1-163-105-00	s	CERAMIC, CHIP 33pF 5% 50V
C590	1-124-589-11	s	ELECT 47uF 20% 16V
C591	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C592	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C593	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C594	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C595	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C601	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C602	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C610	1-131-344-00	s	TANTALUM 0.33uF 10% 35V

Ref. No. or Q'ty	Part No.	SP	Description
C611	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C620	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V
C621	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C622	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C623	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C624	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C665	1-124-589-11	s	ELECT 47uF 20% 16V
C710	1-163-023-00	s	CERAMIC, CHIP 0.015uF 5% 50V
C711	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C712	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C713	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C714	1-163-275-11	s	CERAMIC, CHIP 1000pF 5% 50V
C720	1-131-345-00	s	TANTALUM 0.47uF 10% 35V
C750	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C751	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C752	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C753	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C754	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C990	1-124-589-11	s	ELECT 47uF 20% 16V
C991	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C992	1-124-584-00	s	ELECT 100uF 20% 10V
C993	1-115-873-91	s	ELECT 3.3uF 20% 50V
C994	1-131-350-00	s	TANTALUM 3.3uF 10% 35V
CN701 Y	1-564-019-41	o	CONNECTOR, 9P, MALE
CN702 Y	1-506-470-11	s	CONNECTOR, 5P, MALE
CN710 W	1-562-887-11	s	CONNECTOR, FPC 20P, FEMALE
CV140	1-141-227-00	s	CAP, TRIMMER 20pF
CV230	1-141-227-00	s	CAP, TRIMMER 20pF
CV550	1-141-260-00	s	CAP, TRIMMER 50PF
CV620	1-141-227-00	s	CAP, TRIMMER 20pF
D140	8-713-102-22	s	DIODE 1T362A-M20E-T8A
D201	8-719-104-34	s	DIODE 1S2836
D230	8-719-002-81	s	DIODE 1T363
D400	8-719-104-34	s	DIODE 1S2836
D620	8-719-002-81	s	DIODE 1T363
D710	8-719-104-34	s	DIODE 1S2836
D720	8-719-104-34	s	DIODE 1S2836
D800	8-719-104-34	s	DIODE 1S2836
FL10	1-235-759-11	s	FILTER, LOW-PASS
FL30	1-235-181-00	s	FILTER, BANDPASS 4.43MHz
FL50	1-236-848-21	s	FILTER, LOW PASS
FL51	1-236-848-21	s	FILTER, LOW PASS
IC50	8-759-168-19	s	IC TA78L09F-TE12L
IC100	8-752-334-55	s	IC CXD1175AM
IC120	8-752-334-55	s	IC CXD1175AM
IC130	8-759-239-23	s	IC TC74HC86AF
IC131	8-759-925-76	s	IC SN74HC08ANS
IC132	8-759-925-85	s	IC SN74HC32ANS
IC160	8-759-987-17	s	IC CXD1226Q
IC161	8-759-925-85	s	IC SN74HC32ANS
IC200	8-759-072-23	s	IC MB87647
IC251	8-759-925-90	s	IC SN74HC74ANS
IC258	8-759-239-58	s	IC TC74HC221AF
IC259	8-759-037-79	s	IC MC74HC163AF
IC260	8-759-037-79	s	IC MC74HC163AF
IC262	8-759-925-90	s	IC SN74HC74ANS
IC300	8-752-351-97	s	IC CXK1206ATM
IC301	8-752-351-97	s	IC CXK1206ATM
IC302	8-752-351-97	s	IC CXK1206ATM
IC303	8-752-351-97	s	IC CXK1206ATM
IC304	8-752-351-97	s	IC CXK1206ATM
IC305	8-752-351-97	s	IC CXK1206ATM
IC350	8-759-927-46	s	IC SN74HC00ANS
IC351	8-759-926-29	s	IC SN74HC175ANS
IC352	8-759-009-51	s	IC MC14538BF
IC353	8-759-925-90	s	IC SN74HC74ANS
IC354	8-759-925-90	s	IC SN74HC74ANS
IC400	8-759-987-18	s	IC CXD1227Q
IC420	8-752-032-96	s	IC CXA1106M
IC440	8-752-032-96	s	IC CXA1106M
IC500	8-759-987-19	s	IC CXD1228Q
IC600	8-759-925-90	s	IC SN74HC74ANS
IC601	8-759-037-79	s	IC MC74HC163AF
IC602	8-759-037-79	s	IC MC74HC163AF
IC603	8-759-037-79	s	IC MC74HC163AF
IC604	8-759-925-74	s	IC SN74HC04ANS
IC710	8-759-239-55	s	IC TC74HC123AF
IC711	8-759-009-51	s	IC MC14538BF
IC751	8-759-081-42	s	IC TC74VHC00F
IC754	8-759-925-90	s	IC SN74HC74ANS
IC755	8-759-925-72	s	IC SN74HC02ANS
IC756	8-759-926-25	s	IC SN74HC165ANS
IC757	8-759-925-90	s	IC SN74HC74ANS
IC800	8-759-925-90	s	IC SN74HC74ANS
IC801	8-759-925-90	s	IC SN74HC74ANS
IC806	8-759-926-25	s	IC SN74HC165ANS
IC807	8-759-926-25	s	IC SN74HC165ANS
IC808	8-759-925-72	s	IC SN74HC02ANS
IC809	8-759-927-46	s	IC SN74HC00ANS
IC990	8-759-521-23	s	IC PQ05RF2V
L10	1-408-408-00	s	INDUCTOR 8.2uH
L12	1-410-482-31	s	INDUCTOR 100uH
L13	1-412-390-21	s	INDUCTOR, CHIP 0uH
L15	1-412-364-11	s	INDUCTOR 0uH
L16	1-412-364-11	s	INDUCTOR 0uH
L17	1-412-364-11	s	INDUCTOR 0uH
L18	1-412-364-11	s	INDUCTOR 0uH
L30	1-408-408-00	s	INDUCTOR 8.2uH
L31	1-410-482-31	s	INDUCTOR 100uH
L32	1-412-390-21	s	INDUCTOR, CHIP 0uH
L33	1-412-390-21	s	INDUCTOR, CHIP 0uH
L51	1-412-390-21	s	INDUCTOR, CHIP 0uH
L52	1-412-390-21	s	INDUCTOR, CHIP 0uH
L53	1-412-390-21	s	INDUCTOR, CHIP 0uH
L54	1-412-390-21	s	INDUCTOR, CHIP 0uH
L55	1-412-390-21	s	INDUCTOR, CHIP 0uH
L56	1-412-390-21	s	INDUCTOR, CHIP 0uH
L57	1-412-364-11	s	INDUCTOR 0uH
L58	1-412-364-11	s	INDUCTOR 0uH
L59	1-412-364-11	s	INDUCTOR 0uH
L60	1-412-364-11	s	INDUCTOR 0uH
L61	1-543-775-11	s	FILTER, NOISE
L62	1-543-775-11	s	FILTER, NOISE
L100	1-410-482-31	s	INDUCTOR 100uH
L120	1-410-482-31	s	INDUCTOR 100uH

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Ref. No. or Q'ty	Part No.	SP	Description
L140	1-410-460-11	s	INDUCTOR 1.5uH
L190	1-410-478-11	s	INDUCTOR 47uH
L202	1-543-775-11	s	FILTER, NOISE
L230	1-410-466-41	s	INDUCTOR 4.7uH
L250	1-410-482-31	s	INDUCTOR 100uH
L270	1-408-617-31	s	INDUCTOR 150uH
L290	1-410-482-31	s	INDUCTOR 100uH
L300	1-410-478-11	s	INDUCTOR 47uH
L301	1-410-478-11	s	INDUCTOR 47uH
L302	1-410-478-11	s	INDUCTOR 47uH
L303	1-410-478-11	s	INDUCTOR 47uH
L304	1-410-478-11	s	INDUCTOR 47uH
L305	1-410-478-11	s	INDUCTOR 47uH
L490	1-410-478-11	s	INDUCTOR 47uH
L491	1-408-425-00	s	INDUCTOR 220uH
L492	1-408-425-00	s	INDUCTOR 220uH
L551	1-408-397-00	s	INDUCTOR 1uH
L590	1-410-478-11	s	INDUCTOR 47uH
Q10	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q12	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q20	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q21	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q30	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q31	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q32	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q33	8-729-202-38	s	TRANSISTOR 2SC3326N
Q50	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q51	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q52	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q53	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q54	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q100	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q120	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q140	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q141	8-729-122-63	s	TRANSISTOR 2SA1226
Q210	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q214	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q220	8-729-901-01	s	TRANSISTOR DTC144EK
Q221	8-729-901-06	s	TRANSISTOR DTA144EK
Q270	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q271	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q550	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q551	8-729-122-63	s	TRANSISTOR 2SA1226
Q620	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q621	8-729-140-47	s	TRANSISTOR 2SC3735-B34
Q710	8-729-901-01	s	TRANSISTOR DTC144EK
Q720	8-729-901-01	s	TRANSISTOR DTC144EK
Q800	8-729-901-01	s	TRANSISTOR DTC144EK
Q801	8-729-901-06	s	TRANSISTOR DTA144EK
R10	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R11	1-208-784-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R12	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R13	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R14	1-216-039-00	s	METAL, CHIP 390 5% 1/10W
R15	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R19	1-216-295-91	s	RES, CHIP 0
R20	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R21	1-216-025-91	s	METAL, CHIP 100 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R23	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R24	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R30	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R31	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R32	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R33	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R34	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R35	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R36	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R37	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R38	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R39	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R40	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R41	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R42	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R50	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R51	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R52	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R53	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R54	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R55	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R56	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R57	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R58	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R59	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R60	1-208-784-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R61	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R63	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R100	1-216-047-91	s	METAL, CHIP 820 5% 1/10W
R101	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R102	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R103	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R104	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R105	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R106	1-216-119-00	s	METAL, CHIP 820K 5% 1/10W
R107	1-216-111-91	s	METAL, CHIP 390K 5% 1/10W
R108	1-216-105-91	s	METAL, CHIP 220K 5% 1/10W
R109	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R110	1-216-101-00	s	METAL, CHIP 150K 5% 1/10W
R121	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R122	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R123	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R124	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R125	1-208-806-11	s	METAL, CHIP 10K 0.5% 1/10W
R126	1-208-806-11	s	METAL, CHIP 10K 0.5% 1/10W
R130	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R131	1-208-814-11	s	METAL, CHIP 22K 0.5% 1/10W
R132	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R134	1-216-295-91	s	RES, CHIP 0
R140	1-216-119-00	s	METAL, CHIP 820K 5% 1/10W
R141	1-216-111-91	s	METAL, CHIP 390K 5% 1/10W
R142	1-216-105-91	s	METAL, CHIP 220K 5% 1/10W
R143	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R144	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R145	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R146	1-216-011-00	s	METAL, CHIP 27 5% 1/10W
R147	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R148	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R149	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R150	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R151	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R153	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R154	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R160	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R162	1-216-295-91	s	RES, CHIP 0
R165	1-216-295-91	s	RES, CHIP 0
R166	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R200	1-216-117-00	s	METAL, CHIP 680K 5% 1/10W
R201	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R202	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R203	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R220	1-208-814-11	s	METAL, CHIP 22K 0.5% 1/10W
R221	1-208-800-11	s	METAL, CHIP 5.6K 0.5% 1/10W
R230	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R231	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R233	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R234	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R235	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R236	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R240	1-216-295-91	s	RES, CHIP 0
R242	1-216-295-91	s	RES, CHIP 0
R250	1-208-822-11	s	METAL, CHIP 47K 0.5% 1/10W
R260	1-208-817-11	s	METAL, CHIP 30K 0.5% 1/10W
R261	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R262	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R263	1-216-117-00	s	METAL, CHIP 680K 5% 1/10W
R270	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R272	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R273	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R274	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R275	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R281	1-216-295-91	s	RES, CHIP 0
R282	1-216-295-91	s	RES, CHIP 0
R284	1-216-295-91	s	RES, CHIP 0
R286	1-216-295-91	s	RES, CHIP 0
R287	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R356	1-208-822-11	s	METAL, CHIP 47K 0.5% 1/10W
R357	1-208-810-11	s	METAL, CHIP 15K 0.5% 1/10W
R400	1-216-295-91	s	RES, CHIP 0
R404	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R405	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R406	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R407	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R408	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R409	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R410	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R411	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R412	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R413	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R414	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R415	1-216-295-91	s	RES, CHIP 0
R416	1-216-295-91	s	RES, CHIP 0
R501	1-216-295-91	s	RES, CHIP 0
R503	1-216-295-91	s	RES, CHIP 0
R504	1-216-295-91	s	RES, CHIP 0
R510	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R511	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R512	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W

(VM-12P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R513	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R514	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R515	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R523	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R550	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R551	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R552	1-216-011-00	s	METAL, CHIP 27 5% 1/10W
R557	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R558	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R559	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R605	1-216-295-91	s	RES, CHIP 0
R610	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R611	1-216-047-91	s	METAL, CHIP 820 5% 1/10W
R620	1-208-789-11	s	METAL, CHIP 2K 0.5% 1/10W
R621	1-208-784-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R622	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R623	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W
R624	1-208-817-11	s	METAL, CHIP 30K 0.5% 1/10W
R625	1-216-638-11	s	METAL, CHIP 300 0.5% 1/10W
R626	1-208-823-11	s	METAL, CHIP 51K 0.5% 1/10W
R627	1-216-648-11	s	METAL, CHIP 750 0.5% 1/10W
R672	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R703	1-216-295-91	s	RES, CHIP 0
R708	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R709	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R710	1-216-101-00	s	METAL, CHIP 150K 5% 1/10W
R711	1-208-806-11	s	METAL, CHIP 10K 0.5% 1/10W
R712	1-208-810-11	s	METAL, CHIP 15K 0.5% 1/10W
R713	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R714	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R717	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R720	1-208-814-11	s	METAL, CHIP 22K 0.5% 1/10W
R721	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R722	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R723	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R750	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R751	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R800	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R806	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R807	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R808	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R810	1-216-295-91	s	RES, CHIP 0
R990	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R991	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
X301	1-579-057-11	s	CRYSTAL 17.734475MHz
X550	1-577-704-11	s	CRYSTAL 14.21875MHz
X620	1-579-057-11	s	CRYSTAL 17.734475MHz

VO-37A BOARD **SERIAL NO. 14891 AND HIGHER**

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-318-B	o	MOUNTED CIRCUIT BOARD, VO-37A
1pc	3-168-157-02	o	BRACKET (R), VO BOARD
1pc	3-168-158-01	o	BRACKET (L), VO BOARD
1pc	3-173-464-01	o	SHIELD (A), VO BOARD
1pc	3-173-465-01	o	SHIELD (B), VO BOARD
1pc	3-659-918-01	o	HEAT SINK, IC (for IC1)
3pcs	3-703-353-08	o	SUPPORTER, PC BOARD
2pcs	4-886-821-11	s	SCREW, S TIGHT, +PTTWH 3X6
1pc	7-682-547-04	s	SCREW +B 3x6
C1	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C2	1-126-516-11	s	ELECT 120uF 20% 16V
C3	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C4	1-126-516-11	s	ELECT 120uF 20% 16V
C5	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C6	1-126-785-11	s	ELECT 47uF 20% 10V
C30	1-124-584-00	s	ELECT 100uF 20% 10V
C31	1-124-584-00	s	ELECT 100uF 20% 10V
C101	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C102	1-163-135-00	s	CERAMIC, CHIP 560pF 5% 50V
C103	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C104	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C105	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C106	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C107	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C108	1-126-783-11	s	ELECT 22uF 20% 10V
C109	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C110	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C111	1-115-872-91	s	ELECT 2.2uF 20% 50V
C112	1-126-794-11	s	ELECT 4.7uF 20% 50V
C113	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C114	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C115	1-126-924-11	s	ELECT 330uF 20% 10V
C116	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C117	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C118	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C119	1-126-785-11	s	ELECT 47uF 20% 10V
C120	1-115-872-91	s	ELECT 2.2uF 20% 50V
C121	1-126-785-11	s	ELECT 47uF 20% 10V
C122	1-126-794-11	s	ELECT 4.7uF 20% 50V
C123	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C125	1-163-136-00	s	CERAMIC, CHIP 620pF 5% 50V
C126	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C127	1-115-872-91	s	ELECT 2.2uF 20% 50V
C128	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C129	1-163-131-00	s	CERAMIC, CHIP 390pF 5% 50V
C130	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C131	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C132	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C133	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C134	1-163-139-00	s	CERAMIC, CHIP 820pF 5% 50V
C135	1-124-465-00	s	ELECT 0.47uF 20% 50V
C136	1-126-785-11	s	ELECT 47uF 20% 10V
C137	1-126-785-11	s	ELECT 47uF 20% 10V
C141	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C142	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C143	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C145	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C146	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C147	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V

Ref. No. or Q'ty	Part No.	SP	Description
C148	1-126-785-11	s	ELECT 47uF 20% 10V
C149	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C150	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C151	1-126-785-11	s	ELECT 47uF 20% 10V
C152	1-163-257-11	s	CERAMIC, CHIP 180pF 5% 50V
C153	1-163-231-11	s	CERAMIC, CHIP 15pF 5% 50V
C154	1-126-785-11	s	ELECT 47uF 20% 10V
C155	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C156	1-163-257-11	s	CERAMIC, CHIP 180pF 5% 50V
C157	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C158	1-163-108-00	s	CERAMIC, CHIP 43PF 5% 50V
C160	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C161	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C162	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C163	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C164	1-163-091-00	s	CERAMIC, CHIP 8pF 50V
C165	1-163-099-00	s	CERAMIC, CHIP 18pF 5% 50V
C167	1-163-113-00	s	CERAMIC, CHIP 68pF 5% 50V
C170	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C172	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C173	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C174	1-126-786-11	s	ELECT 47uF 20% 16V
C175	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C180	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C181	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C182	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C201	1-126-785-11	s	ELECT 47uF 20% 10V
C202	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C203	1-126-785-11	s	ELECT 47uF 20% 10V
C204	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C205	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C208	1-163-127-00	s	CERAMIC, CHIP 270pF 5% 50V
C209	1-163-112-00	s	CERAMIC, CHIP 62pF 5% 50V
C211	1-164-491-11	s	CERAMIC, CHIP 300pF 5% 50V
C213	1-126-785-11	s	ELECT 47uF 20% 10V
C214	1-126-794-11	s	ELECT 4.7uF 20% 50V
C215	1-126-794-11	s	ELECT 4.7uF 20% 50V
C216	1-126-785-11	s	ELECT 47uF 20% 10V
C218	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C219	1-126-785-11	s	ELECT 47uF 20% 10V
C220	1-126-785-11	s	ELECT 47uF 20% 10V
C222	1-163-231-11	s	CERAMIC, CHIP 15pF 5% 50V
C223	1-126-785-11	s	ELECT 47uF 20% 10V
C224	1-126-785-11	s	ELECT 47uF 20% 10V
C226	1-126-785-11	s	ELECT 47uF 20% 10V
C227	1-163-231-11	s	CERAMIC, CHIP 15pF 5% 50V
C228	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C230	1-126-785-11	s	ELECT 47uF 20% 10V
C231	1-126-794-11	s	ELECT 4.7uF 20% 50V
C232	1-163-249-11	s	CERAMIC, CHIP 82pF 5% 50V
C233	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C234	1-126-786-11	s	ELECT 47uF 20% 16V
C235	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C240	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C242	1-163-257-11	s	CERAMIC, CHIP 180pF 5% 50V
C243	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C244	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C245	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C246	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C247	1-163-124-00	s	CERAMIC, CHIP 200pF 5% 50V
C249	1-163-113-00	s	CERAMIC, CHIP 68pF 5% 50V
C250	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C251	1-126-785-11	s	ELECT 47uF 20% 10V
C252	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C261	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C262	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C263	1-163-253-11	s	CERAMIC, CHIP 120pF 5% 50V
C301	1-163-113-00	s	CERAMIC, CHIP 68pF 5% 50V
C302	1-126-785-11	s	ELECT 47uF 20% 10V
C309	1-124-584-00	s	ELECT 100uF 20% 10V
C310	1-124-584-00	s	ELECT 100uF 20% 10V
C311	1-126-785-11	s	ELECT 47uF 20% 10V
C312	1-126-785-11	s	ELECT 47uF 20% 10V
C313	1-126-785-11	s	ELECT 47uF 20% 10V
C314	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C315	1-131-360-00	s	TANTALUM 15uF 20% 25V
C320	1-126-785-11	s	ELECT 47uF 20% 10V
C321	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C322	1-131-351-00	s	TANTALUM 4.7uF 10% 35V
C323	1-126-785-11	s	ELECT 47uF 20% 10V
C324	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C325	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C326	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C327	1-163-089-00	s	CERAMIC, CHIP 6pF 50V
C330	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C331	1-126-785-11	s	ELECT 47uF 20% 10V
C332	1-126-794-11	s	ELECT 4.7uF 20% 50V
C333	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C334	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C335	1-126-785-11	s	ELECT 47uF 20% 10V
C336	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C337	1-126-785-11	s	ELECT 47uF 20% 10V
C340	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C341	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C342	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C343	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C344	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C345	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C346	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C347	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C348	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C349	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C350	1-126-786-11	s	ELECT 47uF 20% 16V
C351	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C352	1-124-584-00	s	ELECT 100uF 20% 10V
C353	1-124-584-00	s	ELECT 100uF 20% 10V
C354	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C355	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C356	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C357	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C358	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C359	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C360	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C363	1-126-924-11	s	ELECT 330uF 20% 10V
C364	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C365	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V
C366	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C367	1-163-099-00	s	CERAMIC, CHIP 18pF 5% 50V

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C370	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C371	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C380	1-124-584-00	s	ELECT 100uF 20% 10V
C381	1-124-584-00	s	ELECT 100uF 20% 10V
C382	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C383	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C384	1-126-785-11	s	ELECT 47uF 20% 10V
C385	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C386	1-126-785-11	s	ELECT 47uF 20% 10V
C390	1-126-785-11	s	ELECT 47uF 20% 10V
C391	1-126-785-11	s	ELECT 47uF 20% 10V
C402	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C407	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C408	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C410	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C411	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C413	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C416	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C417	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C418	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C419	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C420	1-124-584-00	s	ELECT 100uF 20% 10V
C422	1-124-584-00	s	ELECT 100uF 20% 10V
C423	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C425	1-126-785-11	s	ELECT 47uF 20% 10V
C426	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 100V
C427	1-126-785-11	s	ELECT 47uF 20% 10V
C428	1-126-785-11	s	ELECT 47uF 20% 10V
C429	1-126-785-11	s	ELECT 47uF 20% 10V
C431	1-164-222-11	s	CERAMIC, CHIP 0.22uF 25V
C432	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C433	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C434	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C435	1-126-157-11	s	ELECT 10uF 20% 16V
C436	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C440	1-126-157-11	s	ELECT 10uF 20% 16V
C441	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C450	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C451	1-163-108-00	s	CERAMIC, CHIP 43PF 5% 50V
C452	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C454	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 50V
C455	1-126-157-11	s	ELECT 10uF 20% 16V
C460	1-124-584-00	s	ELECT 100uF 20% 10V
C461	1-131-377-00	s	TANTALUM 10uF 10% 10V
C471	1-124-584-00	s	ELECT 100uF 20% 10V
C472	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C473	1-126-786-11	s	ELECT 47uF 20% 16V
C480	1-126-785-11	s	ELECT 47uF 20% 10V
C481	1-124-257-00	s	ELECT 2.2uF 20% 50V
C482	1-124-584-00	s	ELECT 100uF 20% 10V
C483	1-124-584-00	s	ELECT 100uF 20% 10V
C488	1-124-584-00	s	ELECT 100uF 20% 10V
C489	1-126-916-11	s	ELECT 1000uF 20% 6.3V
C491	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C492	1-126-925-11	s	ELECT 470uF 20% 10V
C493	1-126-916-11	s	ELECT 1000uF 20% 6.3V
C494	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C495	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C496	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V

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Ref. No. or Q'ty	Part No.	SP	Description
C497	1-126-791-11	s	ELECT 10uF 20% 16V
C498	1-124-584-00	s	ELECT 100uF 20% 10V
C499	1-126-916-11	s	ELECT 1000uF 20% 6.3V
CN201 B	1-506-471-11	s	CONNECTOR 6P, MALE
CN202 W	1-506-472-11	s	CONNECTOR 7P, MALE
CN203 B	1-506-475-11	s	CONNECTOR 10P, MALE
CN206 W	1-564-004-11	o	CONNECTOR 5P, MALE
CN207 W	1-506-471-11	s	CONNECTOR 6P, MALE
CN208 W	1-564-002-11	s	CONNECTOR 3P, MALE
CN211 W	1-562-992-11	o	CONNECTOR, FPC 26P, FEMALE
CN221 W	1-506-474-11	s	CONNECTOR 9P, MALE
CN222 Y	1-506-470-11	s	CONNECTOR 5P, MALE
CN231 Y	1-506-470-11	s	CONNECTOR 5P, MALE
CN232 Y	1-506-473-11	s	CONNECTOR 8P, MALE
D10	8-719-801-78	s	DIODE 1SS184
D101	8-719-801-78	s	DIODE 1SS184
D102	8-719-018-80	s	DIODE ND411G-2
D103	8-719-801-78	s	DIODE 1SS184
D130	8-719-801-78	s	DIODE 1SS184
D201	8-719-801-78	s	DIODE 1SS184
D202	8-719-801-78	s	DIODE 1SS184
D301	8-719-801-78	s	DIODE 1SS184
D401	8-719-801-78	s	DIODE 1SS184
DL201	1-415-677-11	s	DELAY LINE 370nS
DL301	1-415-559-11	s	DELAY LINE 600nS
FL101	1-236-911-11	s	FILTER, LOW-PASS
FL201	1-236-716-11	s	FILTER, LOW-PASS
FL301	1-239-085-11	s	FILTER, LOW-PASS
FL302	1-239-085-11	s	FILTER, LOW-PASS
IC1	8-759-701-59	s	IC NJM78M09FA
IC10	8-759-231-32	s	IC TC7S00F
IC101	8-759-420-64	s	IC AN3237FB
IC102	8-759-710-07	s	IC NJM2234M
IC201	8-759-710-07	s	IC NJM2234M
IC202	8-759-051-54	s	IC VC2076MP
IC203	8-759-710-86	s	IC NJM2233BM
IC302	8-759-710-86	s	IC NJM2233BM
IC303	8-752-334-55	s	IC CXD1175AM
IC304	8-752-342-61	s	IC CXD2105AQ
IC306	8-759-710-07	s	IC NJM2234M
IC402	8-759-710-07	s	IC NJM2234M
IC403	8-759-710-07	s	IC NJM2234M
IC404	8-759-710-86	s	IC NJM2233BM
IC405	8-759-710-07	s	IC NJM2234M
IC406	8-759-710-07	s	IC NJM2234M
IC407	8-759-710-07	s	IC NJM2234M
IC440	8-759-206-29	s	IC TA7060AP-SONY
IC491	8-759-262-00	s	IC MC14576CF
IC492	8-759-262-03	s	IC MC14577CF
L1	1-410-482-31	s	INDUCTOR 100uH
L101	1-408-420-00	s	INDUCTOR 82uH
L102	1-410-482-31	s	INDUCTOR 100uH
L103	1-410-482-31	s	INDUCTOR 100uH
L105	1-408-416-00	s	INDUCTOR 39uH
L106	1-408-416-00	s	INDUCTOR 39uH
L108	1-410-473-11	s	INDUCTOR 18uH
L109	1-410-482-31	s	INDUCTOR 100uH

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Ref. No. or Q'ty	Part No.	SP	Description
L110	1-410-482-31	s	INDUCTOR 100uH
L111	1-410-478-11	s	INDUCTOR 47uH
L112	1-408-416-00	s	INDUCTOR 39uH
L115	1-408-411-00	s	INDUCTOR 15uH
L116	1-408-411-00	s	INDUCTOR 15uH
L117	1-410-478-11	s	INDUCTOR 47uH
L118	1-410-482-31	s	INDUCTOR 100uH
L120	1-408-416-00	s	INDUCTOR 39uH
L121	1-408-617-31	s	INDUCTOR 150uH
L122	1-408-413-00	s	INDUCTOR 22uH
L201	1-410-482-31	s	INDUCTOR 100uH
L202	1-410-482-31	s	INDUCTOR 100uH
L210	1-410-489-11	s	INDUCTOR 390uH
L213	1-408-617-31	s	INDUCTOR 150uH
L215	1-410-482-31	s	INDUCTOR 100uH
L301	1-410-482-31	s	INDUCTOR 100uH
L302	1-410-482-31	s	INDUCTOR 100uH
L310	1-410-482-31	s	INDUCTOR 100uH
L311	1-410-470-11	s	INDUCTOR 10uH
L312	1-410-471-11	s	INDUCTOR 12uH
L320	1-408-420-00	s	INDUCTOR 82uH
L440	1-408-617-31	s	INDUCTOR 150uH
L441	1-408-414-00	s	INDUCTOR 27uH
L444	1-410-482-31	s	INDUCTOR 100uH
L490	1-410-482-31	s	INDUCTOR 100uH
L496	1-412-390-21	s	INDUCTOR, CHIP 0uH
L498	1-412-390-21	s	INDUCTOR, CHIP 0uH
Q10	8-729-901-06	s	TRANSISTOR DTA144EK
Q11	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q12	8-729-901-01	s	TRANSISTOR DTC144EK
Q13	8-729-901-01	s	TRANSISTOR DTC144EK
Q14	8-729-901-06	s	TRANSISTOR DTA144EK
Q15	8-729-901-01	s	TRANSISTOR DTC144EK
Q16	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q17	8-729-901-06	s	TRANSISTOR DTA144EK
Q19	8-729-901-06	s	TRANSISTOR DTA144EK
Q20	8-729-901-01	s	TRANSISTOR DTC144EK
Q21	8-729-901-01	s	TRANSISTOR DTC144EK
Q22	8-729-901-01	s	TRANSISTOR DTC144EK
Q30	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q31	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q32	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q40	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q41	8-729-202-38	o	TRANSISTOR 2SC3326N
Q101	8-729-901-01	s	TRANSISTOR DTC144EK
Q102	8-729-901-01	s	TRANSISTOR DTC144EK
Q103	8-729-901-01	s	TRANSISTOR DTC144EK
Q104	8-729-901-01	s	TRANSISTOR DTC144EK
Q105	8-729-901-01	s	TRANSISTOR DTC144EK
Q106	8-729-901-01	s	TRANSISTOR DTC144EK
Q107	8-729-901-01	s	TRANSISTOR DTC144EK
Q108	8-729-901-01	s	TRANSISTOR DTC144EK
Q109	8-729-901-01	s	TRANSISTOR DTC144EK
Q110	8-729-901-01	s	TRANSISTOR DTC144EK
Q111	8-729-901-01	s	TRANSISTOR DTC144EK
Q112	8-729-901-01	s	TRANSISTOR DTC144EK
Q113	8-729-901-01	s	TRANSISTOR DTC144EK
Q114	8-729-901-01	s	TRANSISTOR DTC144EK

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Ref. No. or Q'ty	Part No.	SP	Description
Q116	8-729-901-01	s	TRANSISTOR DTC144EK
Q118	8-729-901-06	s	TRANSISTOR DTA144EK
Q119	8-729-901-06	s	TRANSISTOR DTA144EK
Q120	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q121	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q122	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q123	8-729-901-06	s	TRANSISTOR DTA144EK
Q124	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q125	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q126	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q128	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q130	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q131	8-729-901-06	s	TRANSISTOR DTA144EK
Q140	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q141	8-729-901-01	s	TRANSISTOR DTC144EK
Q150	8-729-901-01	s	TRANSISTOR DTC144EK
Q151	8-729-901-01	s	TRANSISTOR DTC144EK
Q201	8-729-901-01	s	TRANSISTOR DTC144EK
Q203	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q204	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q205	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q206	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q207	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q208	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q209	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q210	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q211	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q212	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q213	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q214	8-729-901-06	s	TRANSISTOR DTA144EK
Q215	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q216	8-729-901-01	s	TRANSISTOR DTC144EK
Q261	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q262	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q304	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q305	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q306	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q310	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q311	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q312	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q313	8-729-901-01	s	TRANSISTOR DTC144EK
Q314	8-729-901-01	s	TRANSISTOR DTC144EK
Q320	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q323	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q324	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q326	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q327	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q328	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q329	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q333	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q334	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q335	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q336	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q337	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q339	8-729-202-38	s	TRANSISTOR 2SC3326N
Q341	8-729-202-38	s	TRANSISTOR 2SC3326N
Q402	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q420	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q421	8-729-216-22	s	TRANSISTOR 2SA1162-G

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Ref. No. or Q'ty	Part No.	SP	Description
Q430	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q431	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q432	8-729-903-97	s	TRANSISTOR FMS1FE
Q433	8-729-903-97	s	TRANSISTOR FMS1FE
Q434	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q435	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q438	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q439	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q440	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q480	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q481	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q482	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q483	8-729-230-49	s	TRANSISTOR 2SC2712-YG
R10	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R11	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R12	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R13	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R14	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R15	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R20	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R21	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R22	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R30	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R31	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R32	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R33	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R34	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R35	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R36	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R37	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R41	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R42	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R43	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R50	1-216-295-91	s	RES, CHIP 0
R52	1-216-295-91	s	RES, CHIP 0
R101	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R102	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R103	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R104	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R105	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R106	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R107	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R108	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R109	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R110	1-216-638-11	s	METAL, CHIP 300 0.5% 1/10W
R111	1-216-047-91	s	METAL, CHIP 820 5% 1/10W
R112	1-216-115-00	s	METAL, CHIP 560K 5% 1/10W
R114	1-216-105-91	s	METAL, CHIP 220K 5% 1/10W
R115	1-216-129-00	s	METAL, CHIP 2.2M 5% 1/10W
R116	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R117	1-208-799-11	s	METAL, CHIP 5.1K 0.5% 1/10W
R118	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R119	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R120	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R121	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R122	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R123	1-208-771-11	s	METAL, CHIP 360 0.5% 1/10W
R124	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R125	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R126	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R127	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R128	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R129	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R130	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R132	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R135	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R136	1-208-806-11	s	METAL, CHIP 10K 0.5% 1/10W
R137	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R138	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R139	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R140	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W
R141	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R142	1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W
R143	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W
R144	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R145	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R146	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R148	1-208-785-11	s	METAL, CHIP 1.3K 0.5% 1/10W
R151	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R152	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R155	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R156	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R157	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R158	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R159	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R160	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R161	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R162	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R163	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R164	1-216-295-91	s	RES, CHIP 0
R165	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R166	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R168	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R169	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R170	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R171	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R172	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R173	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R174	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R175	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R176	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R177	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R178	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R179	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R181	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R182	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R183	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R184	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R185	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R186	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R187	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R188	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R190	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R196	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R197	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R201	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R202	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R203	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R205	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R207	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R208	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R209	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R210	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R211	1-216-295-91	s	RES, CHIP 0
R213	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R214	1-216-295-91	s	RES, CHIP 0
R217	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R218	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R219	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R220	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R221	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R222	1-216-043-91	s	METAL, CHIP 560 5% 1/10W
R223	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R224	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R225	1-216-656-11	s	METAL, CHIP 1.6K 0.5% 1/10W
R226	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R227	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R228	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R229	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R230	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R232	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R235	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R250	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R251	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R252	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R253	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R254	1-208-800-11	s	METAL, CHIP 5.6K 0.5% 1/10W
R255	1-208-806-11	s	METAL, CHIP 10K 0.5% 1/10W
R256	1-208-814-11	s	METAL, CHIP 22K 0.5% 1/10W
R257	1-216-039-00	s	METAL, CHIP 390 5% 1/10W
R258	1-216-642-11	s	METAL, CHIP 430 0.5% 1/10W
R259	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R260	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R261	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R262	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R263	1-216-047-91	s	METAL, CHIP 820 5% 1/10W
R264	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R265	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R270	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R271	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R272	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R277	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R278	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R279	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R280	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R281	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R282	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R283	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R284	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R285	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R286	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R287	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R290	1-208-775-11	s	METAL, CHIP 510 0.5% 1/10W
R291	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R293	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R294	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R295	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R296	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R300	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R310	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R311	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R312	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R313	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R314	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R315	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R316	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R317	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R318	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R319	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R320	1-208-800-11	s	METAL, CHIP 5.6K 0.5% 1/10W
R321	1-216-697-91	s	METAL 82K 0.5% 1/10W
R322	1-216-652-11	s	METAL, CHIP 1.1K 0.5% 1/10W
R323	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R324	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R326	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R327	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R328	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R329	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R330	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R331	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R332	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R333	1-216-627-11	s	METAL, CHIP 100 0.5% 1/10W
R335	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R336	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R337	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R338	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R339	1-216-121-91	s	METAL, CHIP 1M 5% 1/10W
R340	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R341	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R342	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R343	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R344	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R345	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R346	1-216-105-91	s	METAL, CHIP 220K 5% 1/10W
R348	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R349	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R350	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R351	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R352	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R353	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R354	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R355	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R356	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R360	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R361	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R362	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R363	1-208-800-11	s	METAL, CHIP 5.6K 0.5% 1/10W
R364	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R366	1-216-649-11	s	METAL, CHIP 820 0.5% 1/10W
R367	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R368	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R369	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R374	1-208-774-11	s	METAL, CHIP 470 0.5% 1/10W
R375	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R376	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R377	1-216-646-11	s	METAL, CHIP 620 0.5% 1/10W
R378	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R379	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R380	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R381	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R382	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R383	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R384	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R385	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R393	1-216-649-11	s	METAL, CHIP 820 0.5% 1/10W
R394	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R395	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R396	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R397	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R398	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R399	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R400	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R401	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R406	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R407	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R408	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R410	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R411	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R415	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R421	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R422	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R423	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R424	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R425	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R426	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R431	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R432	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R436	1-216-295-91	s	RES, CHIP 0
R437	1-216-295-91	s	RES, CHIP 0
R438	1-216-295-91	s	RES, CHIP 0
R442	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R443	1-216-031-00	s	METAL, CHIP 180 5% 1/10W
R444	1-216-043-91	s	METAL, CHIP 560 5% 1/10W
R445	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R446	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R447	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R448	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R449	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R450	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R451	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R452	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R453	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R454	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R455	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R456	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R457	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R458	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R459	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R460	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R461	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R462	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R466	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R467	1-216-648-11	s	METAL, CHIP 750 0.5% 1/10W
R468	1-208-803-11	s	METAL, CHIP 7.5K 0.5% 1/10W

(VO-37A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R469	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R470	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R471	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R472	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R473	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R474	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R475	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R476	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R477	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R478	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R479	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R480	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R481	1-216-047-91	s	METAL, CHIP 820 5% 1/10W
R482	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R483	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R484	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R485	1-216-047-91	s	METAL, CHIP 820 5% 1/10W
R486	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R487	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R488	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R489	1-208-803-11	s	METAL, CHIP 7.5K 0.5% 1/10W
R490	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R491	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R492	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R493	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R494	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R495	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R496	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R497	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R498	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R499	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
RV30	1-241-761-11	s	RES, ADJ, METAL 1K
RV101	1-241-763-11	s	RES, ADJ, METAL 4.7K
RV102	1-238-016-11	s	RES, ADJ, CARBON 10K
RV103	1-238-016-11	s	RES, ADJ, CARBON 10K
RV104	1-241-765-11	s	RES, ADJ, METAL 22K
RV105	1-241-761-11	s	RES, ADJ, METAL 1K
RV106	1-241-765-11	s	RES, ADJ, METAL 22K
RV107	1-241-765-11	s	RES, ADJ, METAL 22K
RV108	1-241-765-11	s	RES, ADJ, METAL 22K
RV109	1-241-763-11	s	RES, ADJ, METAL 4.7K
RV202	1-241-760-11	s	RES, ADJ, CARBON 470
RV210	1-230-717-11	s	RES, ADJ, CARBON 470
RV211	1-230-717-11	s	RES, ADJ, CARBON 470
RV260	1-230-717-11	s	RES, ADJ, CARBON 470
RV310	1-241-763-11	s	RES, ADJ, METAL 4.7K
RV311	1-241-763-11	s	RES, ADJ, METAL 4.7K
RV401	1-241-761-11	s	RES, ADJ, METAL 1K
RV402	1-241-761-11	s	RES, ADJ, METAL 1K
RV480	1-241-761-11	s	RES, ADJ, METAL 1K
RV481	1-241-762-11	s	RES, ADJ, METAL 2.2K
RV482	1-241-762-11	s	RES, ADJ, METAL 2.2K

FRAME **SERIAL NO.12291 AND HIGHER**

Ref. No. or Q'ty	Part No.	SP	Description
2pcs ⚠	1-532-203-00	s	FUSE, TIME LAG 2A 250V "AC-136 BOARD"
2pcs ⚠	1-532-237-00	s	FUSE, TIME LAG 3.15A 250V "DC-53A BOARD"
1pc	1-690-612-11	o	WIRE, FLEXIBLE CARD 20P "SS-49A BOARD TO VM-12P BOARD"
1pc	1-690-613-11	o	WIRE, FLEXIBLE CARD 26P "VO-37A BOARD TO CR-39 BOARD"
1pc	1-690-614-12	o	WIRE, FLEXIBLE CARD 28P "SS-49A BOARD TO DR-176 BOARD"
CN1001⚠	1-580-375-11	s	INLET, AC 3P, MALE "AC IN"
CS1001	1-810-575-11	s	SENSOR, DEW CONDENSATION (with harness)
FB1001	1-543-775-11	s	FILTER, NOISE "HARNESS(VM VO-1)"
FB1002	1-543-775-11	s	FILTER, NOISE "HARNESS(AU MIC)"
H1001	X-3165-588-1	o	HEAD ASSY, ACE
H1002	8-848-578-12	s	DRUM ASSY DZH-41A
	8-848-579-02	s	UPPER DRUM ASSY DZR-41-R
H1003	1-543-695-11	s	HEAD, FULL-ERASE
M904	X-3727-784-1	s	MOTOR ASSY (includes CM-14 board) "CASSETTE COMPARTMENT"
M1002	8-835-480-02	s	MOTOR, DC SCV-0401A "CAPSTAN"
M1003	8-835-501-01	s	MOTOR, DC SRV-0202A "T-REEL"
M1004	8-835-501-01	s	MOTOR, DC SRV-0202A "S-REEL"
M1005	X-3165-593-3	s	MOTOR ASSY, CAM "LOADING"
PM1001	1-454-531-11	s	SOLENOID, PLUNGER (with harness) "BRAKE"
PM1002	1-454-434-21	s	SOLENOID, PLUNGER (with harness) "PINCH"
PM1003	1-454-334-71	s	SOLENOID, PLUNGER (with harness) "T-BRAKE"
S1004 ⚠	1-570-052-11	s	SWITCH, PUSH (AC POWER) "POWER"
S1005 ⚠	1-570-173-11	s	SWITCH, SLIDE (VOLTAGE SELECT) "VOLTAGE SELECTOR"
T901 ⚠	1-450-912-11	s	TRANSFORMER, POWER (with harness)

HARNESS'S CHILD PARTS **SERIAL NO.12291 AND HIGHER**

Ref. No.
or Q'ty Part No. SP Description

HARNESS(A-ERASE):CN302/AU-161A board to CN617/AH-28 board

CN302F	1-569-196-11	o	HOUSING, 3P
1pc	1-569-191-21	o	CONTACT, FEMALE, AWG22-26
2pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN617F	1-569-195-41	o	HOUSING, 2P
2pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

HARNESS(AC INLET): to CN1/AC-136 board

CN1F ⚠	1-562-211-11	o	HOUSING, VH 3P
2pcs ⚠	1-562-210-11	o	CONTACT, FEMALE, AWG18-22
CN1001⚠	1-580-375-11	s	INLET, AC 3P, MALE
1pc	4-605-946-01	o	COVER, AC INLET

HARNESS(AC CONT):CN142/SS-49A board to CN311/AU-161A board

CN142F	1-569-204-11	o	HOUSING, 11P
11pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN311F	1-569-204-11	o	HOUSING, 11P
11pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

HARNESS(AU HEAD):CN315,316/AU-161A board to CN616/AH-28 borad

CN315F	1-569-196-21	o	HOUSING, 3P
1pc	1-569-191-21	o	CONTACT, FEMALE, AWG22-26
2pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN316F	1-569-196-41	o	HOUSING, 3P
1pc	1-569-191-21	o	CONTACT, FEMALE, AWG22-26
2pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN616F	1-569-197-11	o	HOUSING, 4P
4pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

HARNESS(AU IN):CN309/AU-161A board to CN501/CP-183 board

CN309F	1-569-197-41	o	HOUSING, 4P
4pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN501F	1-569-197-41	o	HOUSING, 4P
4pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

HARNESS(AU MIC):CN2/CN-633 board to CN314/AU-161A board

CN314F	1-569-197-11	o	HOUSING, 4P
1pc	1-569-191-21	o	CONTACT, FEMALE, AWG22-26
3pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN2F	1-569-197-11	o	HOUSING, 4P
1pc	1-569-191-21	o	CONTACT, FEMALE, AWG22-26
3pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
FB1002	1-543-775-11	s	FILTER, NOISE

(HARNESS'S CHILD PARTS)

Ref. No.
or Q'ty Part No. SP Description

HARNESS(AU MONITOR):CN154/KY-219 board to CN307/AU-161A board

CN154F	1-569-201-11	o	HOUSING, 8P
8pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN307F	1-569-201-11	o	HOUSING, 8P
8pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

HARNESS(AU OUT):CN310/AU-161A board to CN502/CP-183 board

CN310F	1-569-202-21	o	HOUSING, 9P
9pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN502F	1-569-202-21	o	HOUSING, 9P
9pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

HARNESS(AU REG):CN140/SS-49A board to CN313/AU-161A board

CN140F	1-569-200-11	o	HOUSING, 7P
7pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN313F	1-569-200-11	o	HOUSING, 7P
7pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

HARNESS(CAPSTAN):CN632/DR-176 board to CN603/CAPSTAN motor

CN632F	1-569-202-11	o	HOUSING, 9P
1pc	1-569-191-21	o	CONTACT, FEMALE, AWG22-26
8pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN603F	1-569-202-11	o	HOUSING, 9P
1pc	1-569-191-21	o	CONTACT, FEMALE, AWG22-26
8pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

HARNESS(CASSECON):CN105/SS-49A board to CN001/CM-14 board

CN105F	1-569-196-11	o	HOUSING, 3P
3pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN001F	1-569-196-11	o	HOUSING, 3P
3pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

HARNESS(CN-KY):CN152/KY-219 board to CN1/CN-633 board

CN152F	1-569-199-11	o	HOUSING, 6P
6pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN1F	1-569-199-11	o	HOUSING, 6P
6pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

HARNESS(CR-SS):CN133/SS-49A board to CN213/CR-39 board

CN133F	1-569-196-11	o	HOUSING, 3P
3pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN213F	1-569-196-11	o	HOUSING, 3P
3pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

(HARNESS'S CHILD PARTS)

Ref. No. or Q'ty	Part No.	SP	Description
HARNESS(CTL):CN107/SS-49A board to CN618/AH-28 board			
CN107F	1-569-196-11	o	HOUSING, 3P
1pc	1-569-191-21	o	CONTACT, FEMALE, AWG22-26
2pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN618F	1-569-195-11	o	HOUSING, 2P
2pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
HARNESS(DRUM):CN634/DR-167 board to CN604/DRUM motor			
CN634	1-562-748-11	o	HOUSING, BOARD-IN 15P
15pcs	1-564-832-11	o	CONTACT, MALE
CN604F	1-580-938-11	o	HOUSING, 15P
15pcs	1-565-740-11	o	CONTACT, FEMALE
HARNESS(F ERASE):CN303/AU-161A board to CN619 /FULL ERASE HEAD			
CN303F	1-569-196-31	o	HOUSING, 3P
1pc	1-569-191-21	o	CONTACT, FEMALE, AWG22-26
2pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN619F	1-569-195-11	s	HOUSING, 2P
2pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
HARNESS(KY):CN111/SS-49A board to CN151/KY-219 board			
CN111F	1-569-202-31	o	HOUSING, 9P
9pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN151F	1-569-202-31	o	HOUSING, 9P
9pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
HARNESS(LD MOTOR):CN106/SS-49A board to CN620/LD-35 board			
CN106F	1-569-195-11	o	HOUSING, 2P
2pcs	1-569-193-21	s	CONTACT, FEMALE, AWG24-30
CN620F	1-569-195-11	o	HOUSING, 2P
2pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
HARNESS(LS SENSOR):CN635/DR-167 board to CN601/SE-224 board			
CN635	1-569-195-11	o	HOUSING, 2P
2pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN601F	1-569-195-11	o	HOUSING, 2P
2pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
HARNESS(OPTION 1):CN114/SS-49A board to CN551/OPTION board			
CN114F	1-569-204-11	o	HOUSING, 11P
11pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN551F	1-569-204-11	o	HOUSING, 11P
11pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

(HARNESS'S CHILD PARTS)

Ref. No. or Q'ty	Part No.	SP	Description
HARNESS(OPTION 2):CN110/SS-49A board to CN552/OPTION board			
CN110F	1-569-205-31	o	HOUSING, 12P
12pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN552F	1-569-205-11	o	HOUSING, 12P
12pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
HARNESS(POWER 1/2):CN2/AC-136 board to CN3/AC-136 board			
CN2F ⚠	1-562-285-11	o	HOUSING, VH 4P
2pcs ⚠	1-562-210-11	s	CONTACT, FEMALE, AWG18-22
CN3F ⚠	1-562-211-11	o	HOUSING, VH 3P
2pcs ⚠	1-562-210-11	o	CONTACT, FEMALE, AWG18-22
S1004⚠	1-570-052-11	s	SWITCH, PUSH (AC POWER)
1pc	3-177-256-01	o	COVER, PS
HARNESS(REMAIN):CN116/SS-49A board to CN503/CP-183 board			
CN116F	1-569-206-41	o	HOUSING, 13P
8pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN503F	1-569-201-11	o	HOUSING, 8P
8pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
HARNESS(RP AFM):CN308/AU-161A board to CN805/RP-62A board			
CN308F	1-569-199-41	o	HOUSING, 6P
6pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN805F	1-569-199-41	o	HOUSING, 6P
6pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
HARNESS(RP CONT):CN132/SS-49A board to CN803/RP-62A board			
CN132F	1-569-199-31	o	HOUSING, 6P
6pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN803F	1-569-199-31	o	HOUSING, 6P
6pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
HARNESS(RP FSC):CN206/VO-37A board to CN806/RP-62A board			
CN206F	1-569-198-11	o	HOUSING, 5P
5pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN806F	1-569-198-11	o	HOUSING, 5P
5pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
HARNESS(RP PB):CN202/VO-37A board to CN802/RP-62A board			
CN202F	1-569-200-11	o	HOUSING, 7P
7pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN802F	1-569-200-11	o	HOUSING, 7P
7pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

(HARNESS'S CHILD PARTS)

HARNESS(RP REC):CN207/VO-37A board to CN807/RP-62A board

Ref. No. or Q'ty	Part No.	SP	Description
CN207F	1-569-199-11	s	HOUSING, 6P
6pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN807F	1-569-199-11	o	HOUSING, 6P
6pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

HARNESS(RP VO):CN208/VO-37A board to CN808/RP-62A board

CN208F	1-569-196-11	o	HOUSING, 3P
3pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN808F	1-569-196-11	o	HOUSING, 3P
3pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

HARNESS(S-REEL):CN123/SS-49A board to CN693/S-REEL motor

CN123F	1-569-202-11	o	HOUSING, 9P
9pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN693F	1-569-202-11	o	HOUSING, 9P
9pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

HARNESS(S TEN):CN657/HN-198A board to LE-131 & SE-230 boards

CN657F	1-569-198-41	o	HOUSING, 5P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(SS REG):CN100/SS-49A board to CN902/DC-53A board

CN100F	1-561-992-11	o	HOUSING, 11P
11pcs	1-560-901-11	o	CONTACT, FEMALE
CN902F	1-561-992-11	o	HOUSING, 11P
11pcs	1-560-901-11	o	CONTACT, FEMALE

HARNESS(SW-1):CN102/SS-49A board to CN658/HN-198A board

CN102F	1-569-201-11	o	HOUSING, 8P
8pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN658F	1-569-201-11	o	HOUSING, 8P
8pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

HARNESS(SW-2):CN103/SS-49A board to CN655/HN-198A board

CN103F	1-569-198-11	o	HOUSING, 5P
5pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN655F	1-569-198-11	o	HOUSING, 5P
5pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

HARNESS(T-BRAKE C):DR-167 board to CN1/DUS-544 board

CN1F	1-569-195-11	o	HOUSING, 2P
2pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

(HARNESS'S CHILD PARTS)

HARNESS(T-REEL):CN124/SS-49A board to CN683/T-REEL motor

Ref. No. or Q'ty	Part No.	SP	Description
CN124F	1-569-202-11	o	HOUSING, 9P
9pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN683F	1-569-202-11	o	HOUSING, 9P
9pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

HARNESS(TR):CN117/SS-49A board to CN157/KY-219 board

CN117F	1-569-197-11	o	HOUSING, 4P
4pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN157F	1-569-197-11	o	HOUSING, 4P
4pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

HARNESS(VM VO-1):CN221/VO-37A board to CN701/VM-12P board

CN221F	1-569-202-11	o	HOUSING, 9P
8pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN701F	1-569-202-41	o	HOUSING, 9P
8pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
FB1001	1-543-775-11	s	FILTER, EMI

HARNESS(VM VO-2):CN222/VO-37A board to CN702/VM-12P board

CN222F	1-569-198-41	o	HOUSING, 5P
4pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN702F	1-569-198-41	o	HOUSING, 5P
4pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

HARNESS(VO CP1):CN231/VO-37A board to CN504/CP-183 board

CN231F	1-569-198-41	o	HOUSING, 5P
5pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN504F	1-569-198-41	o	HOUSING, 5P
5pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

HARNESS(VO CP2):CN232/VO-37A board to CN505/CP-183 board

CN232F	1-569-201-21	o	HOUSING, 8P
8pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN505F	1-569-201-21	o	HOUSING, 8P
8pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

HARNESS(VO CONT):CN203/VO-37A board to CN131/SS-49A board

CN203F	1-569-203-11	o	HOUSING, 10P
10pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN131F	1-569-203-11	o	HOUSING, 10P
10pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30

(HARNESS'S CHILD PARTS)

Ref. No. or Q'ty	Part No.	SP	Description
HARNESS(VO REG):CN201/VO-37A board to CN130/SS-49A board			
CN201F	1-569-199-11	o	HOUSING, 6P
6pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
CN130F	1-569-199-11	o	HOUSING, 6P
6pcs	1-569-193-21	o	CONTACT, FEMALE, AWG24-30
HARNESS(VOLTAGE SELECTOR):CN5/AC-136 board			
CN5F ⚠	1-562-286-11	o	HOUSING, VH 5P
3pcs ⚠	1-562-210-11	o	CONTACT, FEMALE, AWG18-22
S1005⚠	1-570-173-11	o	SWITCH, SLIDE (VOLTAGE SELECTOR)
1pc	3-175-891-02	o	COVER, SWITCH
BRAKE SOLENOID: to CN656/HN-198A board			
CN656F	1-569-196-11	o	HOUSING, 3P
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
DEW CONDENSATION SENSOR: to CN108/SS-49A board			
CN108F	1-562-147-11	o	HOUSING, 2P
2pcs	1-564-026-00	s	CONTACT, FEMALE, AWG26-30
PINCH SOLENOID: to CN118/SS-49A board			
CN118F	1-569-196-31	o	HOUSING, 3P
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
POWER TRANSFORMER:CN4/AC-136 board to CN101/DC-53A board			
CN4F ⚠	1-562-286-11	o	HOUSING, VH 5P
3pcs ⚠	1-562-210-11	o	CONTACT, FEMALE, AWG18-22
CN101F⚠	1-562-285-11	o	HOUSING, VH 4P
4pcs ⚠	1-562-210-11	o	CONTACT, FEMALE, AWG18-22
T-BRAKE SOLENOID: to CN633/DR-167 board			
CN633F	1-569-196-11	o	HOUSING, 3P
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30